AD-A204



FIRE SAFETY ANALYSIS OF THE POLAR ICEBREAKER REPLACEMENT DESIGN

VOLUME III - PART II

BY

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> FINAL REPORT OCTOBER 1987

Document is available to the U.S. public through The National Technical Information Service, Springfield, Virginia 22161



United States Coast Guard
Office of Marine Safety, Security,
and Environmental Protection
Washington, DC 20593

89 2 15 001

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	Technical	Report Documentation Page
1. Report No.	2. Government Accession No.	3. Recipient's Catalog No.
CG-M-04-88		
4. Title and Subtitle		5. Report Date
FIRE SAFETY ANALYSIS OF	THE POLAR ICEBREAKER	OCTOBER 1987
REPLACEMENT DESIGN		6. Performing Organization Code
		8. Performing Organization Report No.
7. Author(s)		CG-MFSRS-63
Robert C. Richards		
9. Performing Organization Name and Add	ress	10. Work Unit No. (TRAIS)
United States Coast Guard		
Marine Fire and Safety Research St	aff	11. Contract or Grant No.
Avery Point Groton, Connecticut 06340-6096		<u></u>
12. Sponsoring Agency Name and Address	•••	13. Type of Report and Period Covered
U.S. Coast Guard	••	FINAL
Naval Engineering Division		FINAL
2100 2nd Street, S.W.		14. Sponsoring Agency Code
Washington, D.C. 20593		}
15. Supplementary Notes		
7	· .	

16. Abstract

This report documents the developmental application of the Ship Fire Safety Engineering Method (SFSEM) to the fire safety analysis of the Polar Icebreaker Replacement (PIR) design. The passive and active fire protection were analyzed in the integrated framework provided by SFSEM for every compartment on the PIR. Conventional fire protection engineering was employed whenever information necessary for SFSEM was not available. Recommendations for alternative solutions to fire safety discrepancies and guidelines for fire protection systems on the PIR are provided.

Five levels of fire protection were found in the PIR design. Passive fire protection is the most significant factor in meeting the fire safety objectives. The major improvement recommended for passive fire protection is to subdivide the boiler room. Refinements are recommended for Active Fire Protection systems but the most significant recommendation is for improved and integrated automatic fire detection. With these changes the fire safety of every compartment is well within the fire safety objectives established. Smoke control was identified as the area where the most significant gains could be made in fire protection and life safety.

The Ship Fire Safety Engineering Method proved to be an effective method for integrating the five levels of fire protection on the PIR. An extensive data base was developed which will greatly facilitate future ship fire safety analyses. Output from SFSEM would be very useful in damage control planning.

This report is presented in three volumes. Volume I presents the recommended improvements to the PIR and the analysis which lead to them. Volume II presents the data necessary to conduct the analysis, and Volume III presents fire safety summaries for each compartment and its barriers.

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17. Key Words			18. Distribution St	atement	
fire safety analysis ship fire 5 fire hazards		objectives ement analysis vement analysis	through the	ent is available to National Techni oringfield, Virgini	
19. Security Classif. (of this UNCLASSIFIED	s report)	20. SECURITY CLASS UNCLASSIFIE		21. No. of Pages	22. Price

METRIC CONVERSION FACTORS

Approximate Conversions from Metric Measures	By To Find Symbol			inches	reet ri	ailes ai		square inches in?	square yards yd2	e miles	acres		onuces 02		short tons			fluid ounces	cnbs					cubic yards yd		~	en Fahrenheit °F		212°F 160, 200
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ersions to Me	Multiply By	LENGTH	* 2.5	30	0.9	1.6	AREA	6.5	0.09	89.0	0 S. C	r S	MASS (WEIGHT)	28		6.0	VOLUME	9	15	30	0.24	0.47	0.85	8.6	0.03	97.0	APERATUF	5/9 (after	subfracting 32) exact conversion
Approximate Conversions to Metric Measures	Symbol When You Know Multiply By	LENGTH	inches # 2.5	feet 30		miles 1.6	AREA	square inches 6.5	square feet 0.09	**	square miles 2.6		MASS (WEIG	ounces 28		short tons (2000 lb) 0.9	NOFOM		tablespoons 15	ounces 3						cubic yards 0.76	TEMPERATURE (EXACT)	Fahrenheit 5/9 (aft	temperature subtracting temperature 32) (**1.10 = 2.54 (exactly). For other exact conversions and more detailed tables.

- I A percentage which represents the probability that the fire will terminate itself
- A A percentage which represents the probability that the fire will be suppressed by an automated system.
- M A percentage which represents the probability that the fire will be suppressed manually (by damage control teams).
- FRI Time The time when the compartment as room of origin reaches Full Room Involvement or Flashover measured from the time it has reached Established Burning.
- Mat ID A code indicating the type of material composing the barrier. Types include:
 - 00 Zero strength bulkhead
 - W1 Expanded metal "screening"
 - W2 Nomex honeycomb core panel-plastic laminate both sides
 - W3 Nomex honeycomb core panel-stainless steel both sides
 - Nomex honeycomb core panel-plastic laminate & thermal insulation
 - M5 Steel joiner
 - W6 Structural steel
 - ฟีว Steel joiner with thermal insulation
 - W8 Structural steel with thermal insulation
 - FO Zero strength deck
 - F1 Aluminum grating
 - F2 Steel grating
 - F3 Steel deck
 - F4 Steel deck with poured floor or tile (1/4" thick)
 - CO Zero strength overhead
 - C1 Aluminum grating
 - C2 Steel grating
 - C3 Steel deck
 - C4 Steel overhead with poured floor or tile (1/4" thick)
- D/H The number of doors or hatches in the barrier.
- Thar The propensity for failure of the barrier through a thermal failure. The Thar value, range 0-300, represents the number of 1000's BTU's that the barrier can withstand.
- Dbar The propensity for failure of the barrier through a durability failure. The Dbar value, range 0-300, represents the number of 1000's BTU's that the barrier can withstand.
- % Heat Rel The percentage of residual heat which would be transferred from one room to the next if the barrier has a durability failure

Compartment: 1-028-0-K FLAMMABLE LIQUIDS STOREROOM

USE: K Stowage of chemicals/dangerous materials; not gas and oil

AREA: 576 sq.ft. DECK HEIGHT: 13.0 ft. VOLUME: 7,488 cu.ft.

UNACCEPTABLE LOSS: Code 1 (Fire reaches established burning.)
THRESHOLD FREQUENCY OF UNACCEPTABLE LOSS: 0.0330 per ship year

FREQUENCY OF ESTABLISHED BURNING: 0.0015

FUEL LOAD: 9,888 BTUs/sq.ft.

Misc. Class A - Assumes several cans fail

UENTILATION: 1,872 cu ft/min EXCHANGE TIME: 4.0 min.

UENT AREA: 10 sq.in. UENT HEIGHT: 1 in.

FIRE STARTED DUE TO: | I FRI A M Time

Fire Origin | 5 2 85 10 Tbar Failure | 20 2 25 40 Dbar Failure | 5 * 0 0

* calculated as (100 - % Heat Release)/100 X FRI Time or 2 min., whichever is greater.

DETECTION:

Manual:

Occupied 0% of time in port and 0% of time at sea.

Automatic:

Rate of temperature rise detection system (RR) Photo electric smoke detection system (P)

FIRST AID FIRE PROTECTION:

1 Hand portable dry chemical fire extinguisher (PKP)

AUTOMATED FIRE PROTECTION SYSTEMS:

1 Halon 1301 total flooding system - remotely actuated

MANUAL FIRE FIGHTING EQUIPMENT:

Compartment: 1-028-0-K FLAMMABLE LIQUIDS STOREROOM

	riers Compts ID and Name)	Mat ID	D/H	Area- sq.ft.	Tbar	Dbar	%heat rel
1-4-0-A 1-4-2-Q 2-014-0-W 2-4-0-A	STOREROOM BOW BOOM INSTRUMENT ROOM PEAK TANK STOREROOM	W6 W6 F3 F3	1 0 0 0	261.3 261.3 189.9 2.4	10 10 25 25	100 100 300 300	5 5 5 5

Acces	sion For	·
NTIS	GRA&I	
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	ibution,	·
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Compartment: 1-4-0-A STOREROOM

USE: AS Storerooms

AREA: 611 sq.ft. DECK HEIGHT: 13.0 ft. UOLUME: 7,945 cu.ft.

UNACCEPTABLE LOSS: Code 4 (2 compartments of one type lost to fire) THRESHOLD FREQUENCY OF UNACCEPTABLE LOSS: 0.3300 per ship year

FREQUENCY OF ESTABLISHED BURNING: 0.0009

FUEL LOAD: 2,080,000 BTUs/sq.ft.

Boxes of flammable stores--Fuel load in psf = 20 x height of deck

UENTILATION: 1,589 cu ft/min EXCHANGE TIME: 5.0 min. UENT AREA: 2000 sq.in. UENT HEIGHT: 90 in.

FIRE STARTED DUE TO: | I FRI A M | Time

Fire Origin | 30 6 0 50
Thar Failure | 20 6 0 40

DETECTION:

Manual:

Occupied 5% of time in port and 5% of time at sea.

Automatic:

Rate of temperature rise detection system (RR) Photo electric smoke detection system (P)

FIRST AID FIRE PROTECTION:

1 Hand portable dry chemical fire extinguisher (PKP)

AUTOMATED FIRE PROTECTION SYSTEMS:

MANUAL FIRE FIGHTING EQUIPMENT:

Compartment: 1-4-2-Q BOW BOOM INSTRUMENT ROOM

USE: Q Areas usually unoccupied: engineering, electronics, galleys

AREA: 169 sq.ft. DECK HEIGHT: 13.0 ft. UOLUME: 2,197 cu.ft.

UNACCEPTABLE LOSS: Code 3 (Full compartment lost to fire)

THRESHOLD FREQUENCY OF UNACCEPTABLE LOSS: 0.1000 per ship year

FREQUENCY OF ESTABLISHED BURNING: 0.0023

FUEL LOAD: 16,000 BTUs/sq.ft.

UENTILATION: 1,098 cu ft/min EXCHANGE TIME: 2.0 min.

UENT AREA: 175 sq.in. UENT HEIGHT: 90 in.

FIRE STARTED DUE TO: I FRI 1 Time 1 20 Fire Origin 6 0 20 1 15 Tbar Failure 6 0 40 Dbar Failure 5 * 0 0

* calculated as (100 - % Heat Release)/100 X FRI Time or 2 min., whichever is greater.

DETECTION:

Manual:

Occupied 5% of time in port and 50% of time at sea.

Automatic:

Rate of temperature rise detection system (RR) Photo electric smoke detection system (P)

AUTOMATED FIRE PROTECTION SYSTEMS:

MANUAL FIRE FIGHTING EQUIPMENT:

Compartment:	1-4-2-Q	1	вош воом	INS'	TRUME	NT ROOM			
Barr (Adjoining C		1 Name)		Mat ID	D/H	Area- sq.ft.	Tbar	Dbar	%heat rel
1-028-0-K	FLAMMABLE	LIQUIDS	STORERO	ωe	0	261.3	10	100	5
1-4-0-A	STOREROOM			W2	0	104.0	25	40	30
1-4-0-A	STOREROOM			W2	1	314.6	25	40	30
2-4-0-A	STOREROOM			F3	0	96.5	25	300	5
					2				

Compartment: 1-22-0-Q ANCHOR WINDLASS MACHINERY ROOM

USE: Q Areas usually unoccupied: engineering, electronics, galleys

AREA: 1609 sq.ft. DECK HEIGHT: 13.0 ft. VOLUME: 20,920 cu.ft.

UNACCEPTABLE LOSS: Code 3 (Full compartment lost to fire)

THRESHOLD FREQUENCY OF UNACCEPTABLE LOSS: 0.1000 per ship year

FREQUENCY OF ESTABLISHED BURNING: 0.0110

FUEL LOAD: 12,000 BTUs/sq.ft.

UENTILATION: 2,092 cu ft/min EXCHANGE TIME: 10.0 min.

UENT AREA: 10 sq.in. UENT HEIGHT: 1 in.

* calculated as (100 - % Heat Release)/100 X FRI Time or 2 min., whichever is greater.

DETECTION:

Manual:

Occupied 25% of time in port and 50% of time at sea.

Automatic:

Photo electric smoke detection system (P)

FIRST AID FIRE PROTECTION:

1 Hand portable dry chemical fire extinguisher (PKP)

AUTOMATED FIRE PROTECTION SYSTEMS:

1 AFFF (3%) sprinkler system - remotely actuated

MANUAL FIRE FIGHTING EQUIPMENT:

- 1 1 1/2" Seawater hand line with "all purpose nozzle" 50 ft.
- 2 1 1/2" AFFF (3%) hand line with SFL variable nozzle 50 ft.

Compartment: 1-22-0-Q ANCHOR WINDLASS MACHINERY ROOM

	riers Compts ID and Name)	Mat ID	D/H	Area- eq.ft.	Tbar	Dbar	%heat rel
1-4-0-A	STOREROOM	W2	0	371.8	25	40	30
1-4-0-A	STOREROOM	W2	1	371.8	25	40	30
1-49-0-Q 1-49-0-Q	FAN ROOM FAN ROOM	พธ พธ	0	101.4 105.3	10 10	100	5 5
1-49-1-LP	PASSAGE	ພິ2	0	61.1	25	40	30
1-49-2-LP	PASSAGE	ພິ2	1	98.8	25	40	30
1-49-4-A	STOREROOM	W2	0	302.9	25	40	30
1-49-5-Q	REEFER MACHINERY ROOM	W2	0	340.6	25	40	30
2-22-0-A	STOREROOM	F3	1	1264.8	25	300	5

, **3**

Compartment: 1-49-0-Q FAN ROOM

USE: QF Fan Rooms

AREA: 236 sq.ft. DECK HEIGHT: 13.0 ft. VOLUME: 3,070 cu.ft.

UNACCEPTABLE LOSS: Code 8 (All compartments of one type lost to fire)

THRESHOLD FREQUENCY OF UNACCEPTABLE LOSS: 0.3300 per ship year

FREQUENCY OF ESTABLISHED BURNING: 0.0004

FUEL LOAD: 4,000 BTUs/sq.ft.

UENTILATION: 1,535 cu ft/min EXCHANGE TIME: 2.0 min.

VENT AREA: 10 sq.in. UENT HEIGHT: 1 in.

FIRE STARTED DUE TO: I I FRI A 1 Time l 100 999 0 20 Fire Origin

DETECTION:

Manual:

Occupied 0% of time in port and 0% of time at sea.

Photo electric smoke detection system (P)

FIRST AID FIRE PROTECTION:

1 Hand portable carbon dioxide fire extinguisher

AUTOMATED FIRE PROTECTION SYSTEMS:

MAHUAL FIRE FIGHTING EQUIPMENT:

5

BARRIER FIRE SAFETY SUMMARY FOR POLAR ICEBREAKER REPLACEMENT (drawings dated 5/12/87)

Compartment: 1-49-0-Q FAN ROOM Barriers Mat D/H Area- Than Dhan %heat (Adjoining Compts ID and Name) ID sq.ft. rel ----1-22-0-Q ANCHOR WINDLASS MACHINERY W6 0 101.4 10 100 1-22-0-Q ANCHOR WINDLASS MACHINERY W6 0 105.3 10 100 1-45-1-LP PASSAGE W6 1 240.5 10 100 1-22-0-Q ANCHOR WINDLASS MACHINERY W6 0 105.3 10 100 1-45-1-LP PASSAGE W6 1 240.5 10 100 1-49-2-LP PASSAGE W6 0 247.0 10 100 1-52-0-LP PASSAGE W6 0 182.0 10 100 2-22-0-A STOREROOM F3 0 1.3 25 300 2-49-0-AA SCIENCE STORAGE--UPPER CA F3 0 234.9 25 300 5 5 5

Compartment: 1-49-1-LP PASSAGE

USE: LP Passageways

AREA: 437 sq.ft. DECK HEIGHT: 13.0 ft. VOLUME: 5,683 cu.ft.

UNACCEPTABLE LOSS: Code 8 (All compartments of one type lost to fire) THRESHOLD FREQUENCY OF UNACCEPTABLE LOSS: 0.1000 per ship year

FREQUENCY OF ESTABLISHED BURNING: 0.0001

FUEL LOAD: 3,200 BTUs/sq.ft.

Paint, cable insulation laminate on blkhds-no dropped ceiling

UENTILATION: 1,136 cu ft/min EXCHANGE TIME: 5.0 min.
UENT AREA: 750 sq.in. UENT HEIGHT: 12 in.

FIRE STARTED DUE TO: | I FRI A M | Time | | 95 20 0 40 | Thar Failure | | 80 20 0 60 | Dhar Failure | | 40 * 0 0 | * calculated as (100 - % Heat Release)

* calculated as (100 - % Heat Release)/100 X FRI Time or 2 min., whichever is greater.

DETECTION:

Manual:

Occupied 30% of time in port and 50% of time at sea.

Automatic:

Photo electric smoke detection system (P)

AUTOMATED FIRE PROTECTION SYSTEMS:

MANUAL FIRE FIGHTING EQUIPMENT:

Compartment: 1-49-1-LP PASSAGE

Barr: (Adjoining Co	iers ompts ID and Name)	Mat ID	D∕H	Area- sq.ft.	Thar	Dbar	%heat rel
1-100-0-LP	PASSAGE	⊌6	0	117.0	10	100	5
1-100-1-TS	STAIRCASE	W6	Õ	28.0	10	100	5
1-100-3-LP	PASSAGE	W6	1	52.0	10	100	5
1-100-5-LL	CREW MESS	ω6	Ō	253.5	10	100	5
1-22-0-Q	ANCHOR WINDLASS MACHINERY	W2	0	61.1	25	40	30
1-49-0-Q	FAN ROOM	₩ 6	1	240.5	10	100	5
1-49-3-Ã	FROZEN STOREROOM NO.1	W2	0	221.0	25	40	30
1-49-5-Q	REEFER MACHINERY ROOM	W2	1	80.6	25	40	30
1-49-7-0	UOID SPACE	W6	0	74.1	10	100	5
1-52-0-LP	PASSAGE	W2	2	468.0	25	40	30
1-61-1-A	THAW STOREROOM	W2	1	195.0	25	40	30
1-81-1-A	FROZEN STOREROOM NO.2	W2	8	195.0	25	40	30
1-81-1-A	FROZEN STOREROOM NO.2	W6	0	3 <i>77</i> .0	10	100	5
2-22-0-A	STOREROOM	F3	0	1.2	25	300	5
2-49-0-AA	SCIENCE STORAGEUPPER CA	F3	0	372.3	25	300	5
2-65-1-Q	ENGINEERING STOREROOM	F3	0	60.6	25	300	5

Compartment: 1-49-2-LP PASSAGE

USE: LP Passageways

AREA: 533 sq.ft. DECK HEIGHT: 13.0 ft. VOLUME: 6,929 cu.ft.

UNACCEPTABLE LOSS: Code 8 (All compartments of one type lost to fire) THRESHOLD FREQUENCY OF UNACCEPTABLE LOSS: 0.1000 per ship year

FREQUENCY OF ESTABLISHED BURNING: 0.0001

FUEL LOAD: 3,200 BTUs/sq.ft.

Paint, cable insulation laminate on blkhds-no dropped ceiling

UENTILATION: 1,385 cu ft/min EXCHANGE TIME: 5.0 min.

UENT AREA: 1125 sq.in. UENT HEIGHT: 12 in.

FIRE STARTED DUE TO:	1	I	FRI Time	A	M
Fire Origin		95	20	0	40
Thar Failure	ŧ	80	20	Ð	60
Dbar Failure	1	40	*	0	0

* calculated as (100 - % Heat Release)/100 X FRI Time or 2 min., whichever is greater.

DETECTION:

Manual:

Occupied 30% of time in port and 50% of time at sea.

Automatic:

Photo electric smoke detection system (P)

FIRST AID FIRE PROTECTION:

1 Hand portable monoammonium phosphate fire extinguisher

AUTOMATED FIRE PROTECTION SYSTEMS:

MANUAL FIRE FIGHTING EQUIPMENT:

Compartment: 1-49-2-LP PASSAGE

Barri (Adjoining Co	ers mpts ID and Name)	Mat ID	D∕H	Area- sq.ft.	Tbar	Dbar	%heat rel
1-100-0-LP	PASSAGE	W6	0	195.0	10	100	5
1-100-2-LP	PASSAGE	W6	ĭ	52.0	10	100	5
1-22-0-Q	ANCHOR WINDLASS MACHINERY	W2	ī	98.8	25	40	30
1-49-0-Q	FAN ROOM	W6	0	247.0	10	100	5
1-49-4-A	STOREROOM	W2	2	286.0	25	40	30
1-52-0-LP	PASSAGE	W2	2	468.0	25	40	30
1-64-2-A	DRY PROVISION STOREROOM	W6	0	162.5	10	100	5
1-64-2-A	DRY PROUISION STOREROOM	W2	2	325.0	25	40	30
1-89-2-Q0	COMMISSARY OFFICE	W2	1	143.0	25	40	30
2-49-0-AA	SCIENCE STORAGEUPPER CA	F3	1	532.2	25	300	5

Compartment: 1-49-3-A FROZEN STOREROOM NO.1

USE: AR Refrigerated Storage Spaces

AREA: 429 sq.ft. DECK HEIGHT: 13.0 ft. VOLUME: 5,580 cu.ft.

UNACCEPTABLE LOSS: Code 3 (Full compartment lost to fire)

THRESHOLD FREQUENCY OF UNACCEPTABLE LOSS: 0.0330 per ship year

FREQUENCY OF ESTABLISHED BURNING: 0.0009

FUEL LOAD: 1,200,000 BTUs/sq.ft.

UENTILATION: cu ft/min EXCHANGE TIME: min.

UENT AREA: sq.in. UENT HEIGHT: 0 in.

! I FRI A ! Time FIRE STARTED DUE TO: 1 60 999 0 0 Fire Origin Thar Failure l 50 99**9** 0 0

FRI Time or 2 min., whichever is greater.

DETECTION:

Manual:

Occupied 0% of time in port and 5% of time at sea.

Automatic:

AUTOMATED FIRE PROTECTION SYSTEMS:

MANUAL FIRE FIGHTING EQUIPMENT:

Compartment: 1-49-3-A FROZEN STOREROOM NO.1

	riers Compts ID and Name)	Mat ID	D/H	Area- sq.ft.	Tbar	Dbar	%heat rel
					~		
1-49-1-LP	PASSAGE	W2	0	221.0	25	40	30
1-49-5-Q	REEFER MACHINERY ROOM	₩ 6	0	314.6	10	100	5
1-49-7-0	UOID SPACE	₩6	0	222.3	10	100	5
2-49-0-AA	SCIENCE STORAGEUPPER CA	F3	0	171.5	25	300	5
2-49-1-A	SEA BAG LOCKER	F3	0	24.3	25	300	5
2-61-1-M	SMALL ARMS & DEM MAG	F3	0	131.4	25	300	5
2-65-1-Q	ENGINEERING STOREROOM	F3	0	78.8	25	300	5

Compartment: 1-49-4-A STOREROOM

USE: AS Storerooms

AREA: 701 sq.ft. DECK HEIGHT: 13.0 ft. UOLUME: 9,122 cu.ft.

UNACCEPTABLE LOSS: Code 4 (2 compartments of one type lost to fire) THRESHOLD FREQUENCY OF UNACCEPTABLE LOSS: 0.3300 per ship year

FREQUENCY OF ESTABLISHED BURNING: 0.0009

FUEL LOAD: 2,080,000 BTUs/sq.ft.

Boxes of flammable stores -- Fuel load in psf = 20 x height of deck

UENTILATION: 1,824 cu ft/min EXCHANGE TIME: 5.0 min. UENT AREA: 2000 sq.in. UENT HEIGHT: 90 in.

FRI FIRE STARTED DUE TO: ıı ſ Time 6 0 50 Fire Origin ١ 30 Thar Failure 1 20 6 0 40 Dbar Failure * 0 0 10

* calculated as (100 - % Heat Release)/100 X FRI Time or 2 min., whichever is greater.

DETECTION:

Manual:

Occupied 5% of time in port and 5% of time at sea.

Automatic:

Rate of temperature rise detection system (RR) Photo electric smoke detection system (P)

FIRST AID FIRE PROTECTION:

1 Hand portable monoammonium phosphate fire extinguisher

AUTOMATED FIRE PROTECTION SYSTEMS:

MANUAL FIRE FIGHTING EQUIPMENT:

Compartment: 1-49-4-A STOREROOM

Barr (Adjoining C	iers ompts ID and Name)	Mat ID	D/H	Area- sq.ft.	Tbar	Dbar	%heat rel
1-22-0-Q 1-49-2-LP	ANCHOR WINDLASS MACHINERY PASSAGE	W2	0 2	302.9 286.0	25 2 5	40 40	30 30
1-64-2-A 2-49-0-AA 2-65-2-C	DRY PROVISION STOREROOM SCIENCE STORAGEUPPER CA FORWARD REPAIR NO.3	u6 F3 F3	0 0 0	364.0 486.5 50.1	10 25 25	100 300 300	5 5 5

Compartment: 1-49-5-Q REEFER MACHINERY ROOM

USE: Q Areas usually unoccupied: engineering, electronics, galleys

AREA: 319 sq.ft. DECK HEIGHT: 13.0 ft. VOLUME: 4,157 cu.ft.

UNACCEPTABLE LOSS: Code 2 (Major item involved in fire)

THRESHOLD FREQUENCY OF UNACCEPTABLE LOSS: 0.1000 per ship year

FREQUENCY OF ESTABLISHED BURNING: 0.0033

FUEL LOAD: 12,000 BTUs/sq.ft.

UENTILATION: 2,078 cu ft/min EXCHANGE TIME: 2.0 min.

UENT AREA: 10 sg.in. UENT HEIGHT: 1 in.

* calculated as (100 - % Heat Release)/100 X FRI Time or 2 min., whichever is greater.

DETECTION:

Manual:

Occupied 1% of time in port and 1% of time at sea.

Automatic:

Ionization smoke detection system (I)
Photo electric smoke detection system (P)

FIRST AID FIRE PROTECTION:

1 Hand portable carbon dioxide fire extinguisher

AUTOMATED FIRE PROTECTION SYSTEMS:

MANUAL FIRE FIGHTING EQUIPMENT:

- 1 1 1/2" Seawater hand line with "all purpose nozzle" 50 ft.
- 2 1 1/2" AFFF (3%) hand line with SFL variable nozzle 50 ft.

Compartment: 1-49-5-Q REEFER MACHINERY ROOM

	riers Compts ID and Name)	Mat ID	D/H	Area- sq.ft.	Tbar	Dbar	%heat rel
1-22-0-Q	ANCHOR WINDLASS MACHINERY	W2	0	340.6	25	40	30
1-49-1-LP	PASSAGE	W2	1	80.6	25	40	30
1-49-3-A	FROZEN STOREROOM NO.1	W6	0	314.6	10	100	5
1-49-7-U	UOID SPACE	₩ 6	0	32.5	10	100	5
2-22-0-A	STOREROOM	F3	0	3.3	25	300	5
2-49-0-AA	SCIENCE STORAGE UPPER CA	F3	0	70.9	25	300	5
2-49-1-A	SEA BAG LOCKER	F3	n	143.7	25	300	5
2-61-1-M	SMALL ARMS & DEM MAG	F3	0	2.3	25	300	5

Compartment: 1-52-0-LP PASSAGE

USE: LP Passageways

AREA: 504 sq.ft. DECK HEIGHT: 13.0 ft. VOLUME: 6,552 cu.ft.

UNACCEPTABLE LOSS: Code 8 (All compartments of one type lost to fire)

THRESHOLD FREQUENCY OF UNACCEPTABLE LOSS: 0.1000 per ship year

FREQUENCY OF ESTABLISHED BURNING: 0.0001

FUEL LOAD: 3,200 BTUs/sq.ft.

Paint, cable insulation laminate on blkhds-no dropped ceiling

UENTILATION: 1,310 cu ft/min EXCHANGE TIME: 5.0 min.

UENT AREA: 500 sq.in. UENT HEIGHT: 12 in.

FIRE STARTED DUE TO: | I FRI A M | Time | | 95 20 0 40 | Thar Failure | | 80 20 0 60 | Dhar Failure | | 40 * 0 0

DETECTION:

Manual:

Occupied 30% of time in port and 50% of time at sea.

Automatic:

Photo electric smoke detection system (P)

AUTOMATED FIRE PROTECTION SYSTEMS:

MANUAL FIRE FIGHTING EQUIPMENT:

Compartment: 1-52-0-LP PASSAGE

Barr (Adjoining C	iers ompts ID and Name)	Mat ID	D/H	Area- sq.ft.	Tbar	Dbar	%heat rel
1-100-0-LP 1-49-0-Q 1-49-1-LP 1-49-2-LP 2-49-0-AA 2-95-2-Q	PASSAGE FAN ROOM PASSAGE PASSAGE SCIENCE STORAGEUPPER (FWD IC/GYRO ROOM	W6 W6 W2 W2 CA F3 F3	0 0 2 2 2 1	182.0 182.0 468.0 468.0 465.5 38.5	10 10 25 25 25	100 100 40 40 300 300	5 30 30 5 5
			5				

Compartment: 1-61-1-A THAW STOREROOM

USE: AR Refrigerated Storage Spaces

AREA: 112 sq.ft. DECK HEIGHT: 13.0 ft. UOLUME: 1,463 cu.ft.

UNACCEPTABLE LOSS: Code 3 (Full compartment lost to fire)

THRESHOLD FREQUENCY OF UNACCEPTABLE LOSS: 0.0330 per ship year

FREQUENCY OF ESTABLISHED BURNING: 0.0009

FUEL LOAD: 1,200,000 BTUs/sq.ft.

UENTILATION: cu cu ft/min EXCHANGE TIME: min.

UENT HEIGHT: 0 in.

FIRE STARTED DUE TO: l I FRI i Time Fire Origin l 60 999 0 Thar Failure 1 50 999 0

DETECTION:

Manual:

Occupied 0% of time in port and 5% of time at sea.

Automatic:

AUTOMATED FIRE PROTECTION SYSTEMS:

MANUAL FIRE FIGHTING EQUIPMENT:

Compartment	: 1-61-1-A THAW	STO	RERO	MOH				
	riers Compts ID and Name)		Mat ID	D∕H	Area- sq.ft.	Tbar	Dbar	%heat rel
1-49-1-LP	PASSAGE		W2	1	195.0		40	30
2-49-0-AA	SCIENCE STORAGEUPPE	r ca	F3	0 - - 1	112.6	25	300	5

Compartment: 1-61-3-A CHILL STOREROOM

USE: AR Refrigerated Storage Spaces

AREA: 288 sq.ft. DECK HEIGHT: 13.0 ft. VOLUME: 3,744 cu.ft.

UNACCEPTABLE LOSS: Code 3 (Full compartment lost to fire)

THRESHOLD FREQUENCY OF UNACCEPTABLE LOSS: 0.0330 per ship year

FREQUENCY OF ESTABLISHED BURNING: 0.0009

FUEL LOAD: 1,200,000 BTUs/sq.ft.

UENTILATION: cu ft/min EXCHANGE TIME: min.

UENT AREA: sq.in. UENT HEIGHT: 0 in.

* calculated as (100 - % Heat Release)/100 X FRI Time or 2 min., whichever is greater.

DETECTION:

Manual:

Occupied 0% of time in port and 5% of time at sea.

Automatic:

AUTOMATED FIRE PROTECTION SYSTEMS:

MANUAL FIRE FIGHTING EQUIPMENT:

Compartment: 1-61-3-A CHILL STOREROOM								
	iers Compts ID and Name)	Mat ID	D∕H	Area- sq.ft.	Tbar	Dbar	%heat rel	
1-49-7-0	UOID SPACE	W6	0	195.0	10	100	5	
2-49-0-AA 2-65-1-Q	SCIENCE STORAGEUPPER C ENGINEERING STOREROOM	A F3	0 0	70.3 217.0	25 25		5 5	
Z-03-1-V	ENGINEERING STOREROOM	g 3	 n	21/.0	25	340	J	

Compartment: 1-64-2-A DRY PROUISION STOREROOM

USE: AS Storerooms

AREA: 725 sq.ft. DECK HEIGHT: 13.0 ft. VOLUME: 9,425 cu.ft.

UNACCEPTABLE LOSS: Code 3 (Full compartment lost to fire)

THRESHOLD FREQUENCY OF UNACCEPTABLE LOSS: 0.1000 per ship year

FREQUENCY OF ESTABLISHED BURNING: 0.0009

FUEL LOAD: 2,080,000 BTUs/sq.ft.

Boxes of flammable stores -- Fuel load in psf = 20 x height of deck

UENTILATION: 1,570 cu ft/min EXCHANGE TIME: 6.0 min. UENT AREA: 2000 sq.in. UENT HEIGHT: 90 in.

* calculated as (100 - % Heat Release)/100 X FRI Time or 2 min., whichever is greater.

DETECTION:

Manual:

Occupied 5% of time in port and 5% of time at sea.

Automatic:

Rate of temperature rise detection system (RR) Photo electric smoke detection system (P)

FIRST AID FIRE PROTECTION:

1 Hand portable monoammonium phosphate fire extinguisher

AUTOMATED FIRE PROTECTION SYSTEMS:

MANUAL FIRE FIGHTING EQUIPMENT:

Compartment: 1-64-2-A DRY PROUISION STOREROOM

	riers Compts ID and Name)	Mat ID	D∕H	Area- sq.ft.	Tbar	Dbar	%heat rel
1-49-2-LP 1-49-2-LP 1-49-4-A 1-89-2-QO 1-89-4-A 2-49-0-AA 2-65-2-C	PASSAGE PASSAGE STOREROOM COMMISSARY OFFICE SODA STORAGE 1000 CASES SCIENCE STORAGEUPPER CA FORWARD REPAIR NO.3	W6 W2 W6 W2 W2 F3	0 2 0 0 1 0	162.5 325.0 364.0 104.0 123.5 276.5 368.0	10 25 10 25 25 25 25	100 40 100 40 40 300 300	5 30 5 30 30 5 5

COMPARTMENT FIRE SAFETY SUMMARY FOR POLAR ICEBREAKER REPLACEMENT

(drawings dated 5/12/1987)

Compartment: 1-81-1-A FROZEN STOREROOM NO.2

USE: AR Refrigerated Storage Spaces

AREA: 423 sq.ft. DECK HEIGHT: 13.0 ft. VOLUME: 5,509 cq.ft.

UNACCEPTABLE LOSS: Code 3 (Full compartment lost to fire)

THRESHOLD FREQUENCY OF UNACCEPTABLE LOSS: 0.0330 per ship year

FREQUENCY OF ESTABLISHED BURNING: 0.0009

FUEL LOAD: 1,200,000 BTUs/sq.ft.

UENTILATION: cu ft/min EXCHANGE TIME: min.

UENT AREA: sq.in. UENT HEIGHT: 0 in.

FIRE STARTED DUE TO: I FRI • Time 1 60 999 0 Fire Origin Thar Failure - (50 999 0 Đ Dbar Failure 40 0 0

* calculated as (100 - % Heat Release)/100 X FRI Time or 2 min., whichever is greater.

DETECTION:

Manual:

Occupied 0% of time in port and 5% of time at sea. Automatic:

AUTOMATED FIRE PROTECTION SYSTEMS:

MANUAL FIRE FIGHTING EQUIPMENT:

Compartment: 1-81-1-A FROZEN STOREROOM NO.2

Barriers (Adjoining Compts ID and Name)		Mat ID	D/H	Area- sq.ft.	Tbar	Dbar	%heat rel
1-49-1-LP 1-49-1-LP 1-49-7-U	PASSAGE PASSAGE VOID SPACE	พ2 พ6 พ6	0 0 0	195.0 377.0 196.3	25 10 10	40 100 100	30 5 5
2-49-0-AA 2-65-1-Q	SCIENCE STORAGEUPPER CA ENGINEERING STOREROOM	F3 F 3	0 0 	211.0 212.8	25 2 5	300 300	5 5

Compartment: 1-89-2-QO COMMISSARY OFFICE

USE: QO Offices

88 sq.ft. DECK HEIGHT: 13.0 ft. VOLUME: 1,144 cu.ft. AREA:

UNACCEPTABLE LOSS: Code 8 (All compartments of one type lost to fire)

THRESHOLD FREQUENCY OF UNACCEPTABLE LOSS: 1.0000 per ship year

FREQUENCY OF ESTABLISHED BURNING: 0.0004

FUEL LOAD: 20,000 BTUs/sq.ft.

190 cu ft/min EXCHANGE TIME: 6.0 min. UENTILATION:

UENT AREA: 175 sq.in. UENT HEIGHT: 90 in.

i i FRI FIRE STARTED DUE TO: Time 1 20 5 0 1 15 5 0 60 Fire Origin Thar Failure 40 Dbar Failure * 5 * calculated as (100 - % Heat Release)/100 X

FRI Time or 2 min., whichever is greater.

DETECTION:

Manual:

Occupied 5% of time in port and 35% of time at sea.

Automatic:

Photo electric smoke detection system (P)

FIRST AID FIRE PROTECTION:

1 Hand portable monoammonium phosphate fire extinguisher

AUTOMATED FIRE PROTECTION SYSTEMS:

MANUAL FIRE FIGHTING EQUIPMENT:

Compartment: 1-89-2-QO COMMISSARY OFFICE

Barr (Adjoining C	iers ompts ID and Name)	Mat ID	D∕H	Area- sq.ft.	Tbar	Dbar	%heat rel
1-100-4-LW 1-100-6-Q	WR & SHR SHIP LIBRARY	₩6	0	61.1 42.9	10 10	100 100	5 5
1-49-2-LP	PASSAGE	W2	1	143.0	25	40	30
1-64-2-A	DRY PROUISION STOREROOM	W2	0	104.0	25	40	30
1-89-4-A	SODA STORAGE 1000 CASES	W2	0	143.0	25	40	30
2-49-0-AA	SCIENCE STORAGEUPPER CA	F3	0	9.0	25	300	5
2-65-2-C	FORWARD REPAIR NO.3	F3	0	79 . 0	25	300	5

Compartment: 1-89-4-A SODA STORAGE 1000 CASES

USE: AS Storerooms

AREA: 110 sq.ft. DECK HEIGHT: 13.0 ft. VOLUME: 1,430 cu.ft.

UNACCEPTABLE LOSS: Code 4 (2 compartments of one type lost to fire) THRESHOLD FREQUENCY OF UNACCEPTABLE LOSS: 0.3300 per ship year

FREQUENCY OF ESTABLISHED BURNING: 0.0009

FUEL LOAD: 2,080,000 BTUs/sq.ft.

Boxes of flammable stores -- Fuel load in psf = 20 x height of deck

UENTILATION: 286 cu ft/min EXCHANGE TIME: 5.0 min.

UENT AREA: 500 sq.in. UENT HEIGHT: 90 in.

FIRE STARTED DUE TO:	! !	I 	FRI Time	Α	М
Fire Origin	1	30	10	0	30
Tbar Failure	ţ	20	10	0	20
Dbar Failure	1	10	*	0	0

* calculated as (100 - % Heat Release)/100 X FRI Time or 2 min., whichever is greater.

DETECTION:

Manual:

Occupied 15% of time in port and 15% of time at sea.

Automatic:

Rate of temperature rise detection system (RR) Photo electric smoke detection system (P)

AUTOMATED FIRE PROTECTION SYSTEMS:

MANUAL FIRE FIGHTING EQUIPMENT:

Compartment:	1-89-4-A S	SODA S	TORAGE	1000	CASES			
	iers Compts ID and Name)		Mat ID	D∕H	Area- sg.ft.	Tbar	Dbar	%heat rel
1-100-6-Q 1-64-2-A 1-89-2-QO	SHIP LIBRARY DRY PROVISION STOR COMMISSARY OFFICE	REROOM	พ6 เ พ2 พ2	0 1 0	136.5 123.5 143.0	10 25 25	100 40 40	5 30 30
2-65-2-C	FORWARD REPAIR NO.	3	F3	Ō	89.4	25	300	5

1

Compartment: 1-100-0-LP PASSAGE

USE: LP Passageways

AREA: 268 sq.ft. DECK HEIGHT: 13.0 ft. VOLUME: 3,485 cu.ft.

UNACCEPTABLE LOSS: Code 8 (All compartments of one type lost to fire)

THRESHOLD FREQUENCY OF UNACCEPTABLE LOSS: 0.1000 per ship year

FREQUENCY OF ESTABLISHED BURNING: 0.0001

FUEL LOAD: 3,200 BTUs/sq.ft.

Paint, cable insulation laminate on blkhds-no dropped ceiling

UENTILATION: 697 cu ft/min EXCHANGE TIME: 5.0 min.

UENT AREA: 375 sq.in. UENT HEIGHT: 12 in.

FIRE STARTED DUE TO:	 	I	FRI Time	A	М
Fire Origin	1	95	20	0	40
Tbar Failure	1	80	20	0	60
Dhar Failure	1	40	*	0	0

* calculated as (180 - % Heat Release)/100 X FRI Time or 2 min., whichever is greater.

DETECTION:

Manual:

Occupied 30% of time in port and 50% of time at sea.

Automatic:

Photo electric smoke detection system (P)

AUTOMATED FIRE PROTECTION SYSTEMS:

MANUAL FIRE FIGHTING EQUIPMENT:

Compartment: 1-100-0-LP PASSAGE

Barri (Adjoining Co	ers ompts ID and Name)			Area- sq.ft.	Tbar	Dbar	%heat rel
1-100-1-TS	STAIRCASE	ພ 5	0	78 . 0	5	80	5
1-100-1-TS	STAIRCASE	W5	0	188.5	5	80	5
1-100-2-LP	PASSAGE	W2	1	91.0	25	40	30
1-100-3-LP	PASSAGE	W2	1	45.5	25	40	30
1-105-0-Q	GALLEY	ผ3	1	26.0	25	60	25
1-105-0-Q	GALLEY	ωз	0	33.8	25	60	25
1-105-0-Q	GALLEY	ผз	0	169.0	25	60	25
1-105-0-Q	GALLEY	ผ3	0	408.2	25	60	25
1-119-1-Q	SCULLERY	ผ3	0	130.0	25	60	25
1-49-1-LP	PASSAGE	W6	0	117.0	10	100	5
1-49-2-LP	PASSAGE	W6	0	195.0	10	100	5
1-52-0-LP	PASSAGE	ω 6	0	182.0	10	100	5
2-100-0-LP	PASSAGE	F3	0	1.0	25	300	5
2-100-1-L	CREW BERTHING	F3	0	150.0	25	300	5
2-100-2-L	CREW BERTHING	F3	0	115.1	25	300	5
2-105-1-TS	STAIRCASE	F3	0	2.0	25	300	5
01-100-0-LL	WARDROOM & LOUNGE	C3	0	229.0	10	100	5
01-100-2-LP	PASSAGE	C3	0	25.1	10	100	5
01-114-1-LP	Passage	C3	0	14.0	10	100	5

Compartment: 1-100-1-TS STAIRCASE

USE: TS Staircases

87 sq.ft. DECK HEIGHT: 13.0 ft. UOLUME: 1,131 cu.ft. AREA:

UNACCEPTABLE LOSS: Code 8 (All compartments of one type lost to fire)

THRESHOLD FREQUENCY OF UNACCEPTABLE LOSS: 0.1000 per ship year

FREQUENCY OF ESTABLISHED BURNING: 0.0001

FUEL LOAD: 800 BTUs/sq.ft. Paint-no carpet or laminate

226 cu ft/min EXCHANGE TIME: **UENTILATION:**

UENT AREA: 10 sq.in. UENT HEIGHT: 1 in.

I I FRI A FIRE STARTED DUE TO: Time 100 999 0 30 Fire Origin 1 100 999 0 40 Thar Failure Dbar Failure 90

* calculated as (100 - % Heat Release)/100 X FRI Time or 2 min., whichever is greater.

DETECTION:

Manual:

Occupied 30% of time in port and 50% of time at sea. Automatic:

AUTOMATED FIRE PROTECTION SYSTEMS:

MANUAL FIRE FIGHTING EQUIPMENT:

Compartment: 1-100-1-TS STAIRCASE

Barr: (Adjoining Co	iers ompts ID and Name)	Mat ID	D∕H	Area- sq.ft.	Tbar	Dbar	%heat rel
1-100-0-LP	PASSAGE	ωs	0	78.0	5	80	5
1-100-0-LP	PASSAGE	พร ผร	0	188.5	5	80	5 5
1-100-3-LP	PASSAGE	ω 5	1	188.5	5	80	5
1-49-1-LP	PASSAGE	ພຣ	Đ	78.0	10	100	5
2-100-0-LP	Passage	F3	0	29.0	25	300	5
2-100-3-A	GEAR LOCKER	F3	0	22.0	25	300	5
2-105-1-TS	STAIRCASE	F3	1	36.0	25	300	5
01-100-1-TS	STAIRCASE	C3	1	87.0	10	100	5

Compartment: 1-100-2-LP PASSAGE

USE: LP Passageways

AREA: 245 sq.ft. DECK HEIGHT: 13.0 ft. VOLUME: 3,187 cq.ft.

UNACCEPTABLE LOSS: Code 8 (All compartments of one type lost to fire) THRESHOLD FREQUENCY OF UNACCEPTABLE LOSS: 0.1000 per ship year

FREQUENCY OF ESTABLISHED BURNING: 0.0001

0 BTUs/sq.ft.

Paint, cable insulation laminate on blkhds-no dropped ceiling

637 cu ft/min EXCHANGE TIME: sq.in. UENT HEIGHT: 12 in. **UENTILATION:** 5.0 min.

UENT AREA: 1125 sq.in.

FIRE STARTED DUE TO	!	I	FRI Time	A	М
Fire Origin	1	95	20	0	40
Tbar Failure	ı	80	20	0	60
Dbar Failure	1	40	*	0	ß

* calculated as (100 - % Heat Release)/100 X FRI Time or 2 min., whichever is greater.

DETECTION:

Manual:

Occupied 30% of time in port and 50% of time at sea.

Automatic:

Photo electric smoke detection system (P)

AUTOMATED FIRE PROTECTION SYSTEMS:

MANUAL FIRE FIGHTING EQUIPMENT:

Compartment: 1-100-2-LP PASSAGE

Barri (Adjoining Co	ers mpts ID and Name)		D∕H	Area- sq.ft.	Tbar	Dbar	%heat rel
1-100-0-LP 1-100-4-LW 1-100-6-Q 1-105-0-Q 1-124-2-LL 1-145-2-TS 1-162-2-LP 1-49-2-LP 2-100-0-LP 2-100-2-L 2-121-4-L 01-100-2-LP	PASSAGE WR & SHR SHIP LIBRARY GALLEY CPO MESSROOM & LOUNGE STAIRCASE PASSAGE PASSAGE PASSAGE CREW BERTHING CREW BERTHING PASSAGE CPO BERTHING	U2 W3 W2 W3 W2 W5 W6 W6 F3 F3 C3	1 1 1 1 2 1 1 1 0 0	91.0 65.0 247.0 497.9 484.9 208.0 52.0 52.0 166.6 40.0 38.6 97.2 20.0	25 25 25 25 25 10 10 25 25 25 10	60 40 60 40 80 100 100	30 25 30 25 30 55 55 55 55
01-106-2-LW 01-113-2-L 01-117-2-LW 01-125-2-LW	WR WC & SHR CPO BERTHING WR WC & SHR WR WC & SHR	C3 C3 C3	0 0 0 0	32.0 12.0 36.0 32.0	10 10 10 10	100 100 100 100	5 5 5 5
01-125-4-L	CPO BERTHING	C3	0	16.0	10	100	5

Compartment: 1-100-3-LP PASSAGE

USE: LP Passageways

AREA: 245 sq.ft. DECK HEIGHT: 13.0 ft. VOLUME: 3,187 cu.ft.

UNACCEPTABLE LOSS: Code 8 (All compartments of one type lost to fire)

THRESHOLD FREQUENCY OF UNACCEPTABLE LOSS: 0.1000 per ship year

FREQUENCY OF ESTABLISHED BURNING: 0.0001

FUEL LOAD: 3,200 BTUs/sq.ft.

Paint, cable insulation laminate on blkhds-no dropped ceiling

637 cu ft/min EXCHANGE TIME:
Q.in. UENT HEIGHT: 12 in. **VENTILATION:**

UENT AREA: 1125 sq.in.

FIRE STARTED DUE TO	0:	1	I	FRI Time	A	М
Fire Origin		1	95	20	0	40
Tbar Failure		-	80	20	0	60
Dbar Failure		1	40	*	0	0
	* calculated	ā.s	(100	- % H	eat	Release)

% Heat Release)/100 X FRI Time or 2 min., whichever is greater.

DETECTION:

Manual:

Occupied 30% of time in port and 50% of time at sea.

Automatic:

Photo electric smoke detection system (P)

AUTOMATED FIRE PROTECTION SYSTEMS:

MANUAL FIRE FIGHTING EQUIPMENT:

- 1 1 1/2" Seawater hand line with "all purpose nozzle" 50 ft.
- 1 1 1/2" AFFF (3%) hand line with SFL variable nozzle 100 ft.

Compartment: 1-100-3-LP PASSAGE

Barri (Adjoining Co	iers ompts ID and Name)		D∕H	Area- sq.ft.	Tbar	Dbar	%heat rel
1-100-0-LP	PASSAGE	 W2	 1	45.5	25	40	30
1-100-1-TS	STAIRCASE	พร	1	188.5	5	80	5
1-100-5-LL	CREW MESS	W2	2	796.9	25	40	30
1-119-1-Q	SCULLERY	W3	1	182.0	25	60	25
	INCINERATOR ROOM	W2	1	172.9	25	40	30
1-145-1-T	MACHINERY HOIST ROOM	W5	1	104.0	5	80	5
1-154-1-A	STOREROOM	W2	1	104.0	25	40	30
1-162-3-LP	PASSAGE	₩ 6	1	52 .0	10	100	5
1-49-1-LP	Passage	₩ 6	1	52.0	10	100	5 5
2-100-0-LP	Passage	F3	0	245.2	25	300	
01-100-3-L	OFFICER SR	C3	0	65.0	10	100	5
01-111-1-LW	wr wc & shr	C3	0	7.0	10	100	5
01-114-1-LP	PASSAGE	C3	0	80.0	10	100	5 5
01-118-1-LW	wr wc & shr	C3	0	20.0	10	100	5
01-118-3-L	OFFICER SR	C3	0	34.0	10	100	5
01-132-1-LW	wr wc & shr	C3	0	22 . 0	10	100	5
01-132-3-L	OFFICER SR	C3	0	17.2	10	100	5
			10				

Compartment: 1-100-4-LW WR & SHR

USE: LW Wash room, water closet and shower areas

AREA: 26 sq.ft. DECK HEIGHT: 13.0 ft. VOLUME: 338 cu.ft.

UNACCEPTABLE LOSS: Code 8 (All compartments of one type lost to fire)

THRESHOLD FREQUENCY OF UNACCEPTABLE LOSS: 0.1000 per ship year

FREQUENCY OF ESTABLISHED BURNING: 0.0002

FUEL LOAD: 0

0 BTUs/sq.ft.

UENTILATION: 84 cu ft/min EXCHANGE TIME: 4.0 min.

UENT AREA: 175 sq.in. UENT HEIGHT: 90 in.

FIRE STARTED DUE TO:	1	I	FRI Time	A	М
Fire Origin	1	100	999	0	30
Tbar Failure	f	100	999	0	40
Dhar Failure	ı	35	*	Ω	0

* calculated as (100 - % Heat Release)/100 X FRI Time or 2 min., whichever is greater.

DETECTION:

Manual:

Occupied 5% of time in port and 15% of time at sea. Automatic:

AUTOMATED FIRE PROTECTION SYSTEMS:

MANUAL FIRE FIGHTING EQUIPMENT:

Compartment: 1-100-4-LW WR & SHR

Barr (Adjoining C	iers ompts ID and Name)	Mat ID	D/H	Area- sq.ft.	Tbar	Dbar	%heat rel
1-100-2-LP 1-100-6-Q 1-100-6-Q 1-89-2-QO 2-100-0-LP 2-100-4-L 01-100-4-L	PASSAGE SHIP LIBRARY SHIP LIBRARY COMMISSARY OFFICE PASSAGE CREW BERTHING CPO BERTHING	W3 W3 W6 F3 F3 C3	1 0 0 0 0	65.0 65.0 67.6 61.1 10.0 16.0 26.0	25 25 25 10 25 25	60 60 100 300 300	25 25 25 5 5 5

Compartment: 1-100-5-LL CREW MESS

.

USE: LL Lounge areas

AREA: 1240 sq.ft. DECK HEIGHT: 13.8 ft. VOLUME: 16,125 cu.ft.

UNACCEPTABLE LOSS: Code 4 (2 compartments of one type lost to fire) THRESHOLD FREQUENCY OF UNACCEPTABLE LOSS: 0.1000 per ship year

FREQUENCY OF ESTABLISHED BURNING: 0.0012

FUEL LOAD: 4,000 BTUs/sq.ft.

UENTILATION: 4,031 cu ft/min EXCHANGE TIME: 4.0 min.

UENT AREA: 2000 sq.in. UENT HEIGHT: 70 in.

FIRE STARTED DUE TO:	l 	I	FRI A	M
Fire Origin	[70	15 0	30
Tbar Failure	•	50	15 0	40
Dbar Failure	Į.	10	★ 0	0
★ c	alculated as	(100 -	- % Heat	Release)/100

* calculated as (100 - % Heat Release)/100 X FRI Time or 2 min., whichever is greater.

DETECTION:

Manual:

Occupied 60% of time in port and 65% of time at sea.

Automatic:

Rate of temperature rise detection system (RR)

Ionization smoke detection system (I)

Photo electric smoke detection system (P)

FIRST AID FIRE PROTECTION:

1 Hand portable monoammonium phosphate fire extinguisher

AUTOMATED FIRE PROTECTION SYSTEMS:

MANUAL FIRE FIGHTING EQUIPMENT:

Compartment: 1-100-5-LL CREW MESS

Barri		Mat	D/H	Area-	Tbar	Dbar	%heat		
(Adjoining Co	mpts ID and Name)	ID		sq.ft.			rel		
1-100-3-LP	PASSAGE	ພ2	2	796.9	25	40	30		
1-162-3-LP	PASSAGE	₩ 6	0	26.0	10	100	5		
1-162-5-LW	WARD BATH	W6	0	130.0	10	100	5		
1-162-7-L	WARD NO.1	ω 6	0	110.5	10	100	5		
1-49-1-LP	PASSAGE	₩ 6	0	253.5	10	100	5		
2-100-0-LP	PASSAGE	F3	0	122 6	25		5		
2-100-5-A	STACK CHAIR LOCKER	F3	0	20.0	25		5		
2-100-7-LL		F3	Ō	546 4	25	300	5		
2-134-1-LL	CREW STUDY	F3	Ō	244.9	25		5		
2-148-1-0	ATHLETIC GEAR LOCKER	F3	Ō	20.0	25	300	5		
2-148-3-Q		F3	Õ	216.1	25	300	5		
01-100-3-L		C3	Ō	192 5	10	100	5		
01-111-1-LW	WR WC & SHR	C3	0	59.5	10	100	5		
01-114-1-LP	PASSAGE	C3	0	56.0	10	100	5		
01-118-1-LW	WR WC & SHR	C3	0	20.0	10	100	5		
01-118-3-L	OFFICER SR	C3	Ö	169.0	10	100	5		
01-132-1-LW	WR WC & SHR	C3	Õ	11.0	10	100	5		
01-132-3-L	OFFICER SR	Ç3	Õ	126.2	10	100	5		
01-146-1-LW	WR WC & SHR	C3	Û	46.2	10	100	5		
01-146-3-L	OFFICER SR	C3	n	177.8	10	100	5		
01 110 J H	VIIIVER OR	U3		1//.0	10	100	J		

Compartment: 1-100-6-Q SHIP LIBRARY

Compet time in 1-100-0-8 Dill Bibriori

USE: 00 Offices

AREA: 448 sq.ft. DECK HEIGHT: 13.0 ft. VOLUME: 5,824 cu.ft.

UNACCEPTABLE LOSS: Code 8 (All compartments of one type lost to fire)

THRESHOLD FREQUENCY OF UNACCEPTABLE LOSS: 1.0000 per ship year

FREQUENCY OF ESTABLISHED BURNING: 0.0004

FUEL LOAD: 20,000 BTUs/sq.ft.

UENTILATION: 728 cu ft/min EXCHANGE TIME: 8.0 min.

UENT AREA: 200 sq.in. UENT HEIGHT: 90 in.

FIRE STARTED DU	E TO:	† !	I	FRI Time	A	М
Fire Origin		1	20	5	0	60
Tbar Failur		I	15	5	0	40
Dbar Failur	e	J	5	*	0	0

* calculated as (100 - % Heat Release)/100 X FRI Time or 2 min., whichever is greater.

DETECTION:

Manual:

Occupied 5% of time in port and 35% of time at sea.

Automatic:

Photo electric smoke detection system (P)

FIRST AID FIRE PROTECTION:

1 Hand portable monoammonium phosphate fire extinguisher

AUTOMATED FIRE PROTECTION SYSTEMS:

MANUAL FIRE FIGHTING EQUIPMENT:

Compartment: 1-100-6-Q SHIP LIBRARY

Barri (Adjoining Co	ers mpts ID and Name)	Mat ID	D∕H	Area- sq.ft.	Tbar	Dbar	%heat rel
1-100-2-LP	PASSAGE	W2	1	247.0	25	40	30
1-100-4-LW	WR & SHR	ω3	0	65 · 0	25	60	25
1-100-4-LW	WR & SHR	WЗ	0	67.6	25	60	25
1-124-2-LL	CPO MESSROOM & LOUNGE	W2	0	266 · 5	25	40	30
1-89-2-Q0	COMMISSARY OFFICE	₩6	0	42.9	10	100	5
1-89-4-A	SODA STORAGE 1000 CASES	₩6	0	136.5	10	100	5
2-100-0-LP	PASSAGE	F3	0	38.0	25	300	5
2-100-4-L	CREW BERTHING	F3	0	339.9	25	300	5
2-125-2-LW	WR WC & SHR	F3	0	40.0	25	300	5
01-100-4-L	CPO BERTHING	C3	0	140.0	10	100	5
01-106-2-LW	WR WC & SHR	C3	. 0	16.0	10	100	5
01-113-2-L	CPO BERTHING	C3	0	138.0	10	100	5
01-117-2-LW	WR WC & SHR	C3	0	16.0	10	100	5

Compartment: 1-105-0-Q GALLEY

USE: Q Areas usually unoccupied: engineering, electronics, galleys

AREA: 1185 sq.ft. DECK HEIGHT: 13.0 ft. UOLUME: 15,411 cu.ft.

UNACCEPTABLE LOSS: Code 3 (Full compartment lost to fire)

THRESHOLD FREQUENCY OF UNACCEPTABLE LOSS: 0.1000 per ship year

FREQUENCY OF ESTABLISHED BURNING: 0.0021

FUEL LOAD: 4,000 BTUs/sq.ft.

UENTILATION: 1,926 cu ft/min EXCHANGE TIME: 8.0 min.

UENT AREA: 225 sq.in. UENT HEIGHT: 90 in.

FIRE STARTED DUE TO:	i !	I	FRI Time	A	М
Fire Origin	1	90	6	0	20
Tbar Failure	1	70	6	0	43
Dhar Failure	ļ	50	*	0	0

* calculated as (100 - % Heat Release)/100 X FRI Time or 2 min., whichever is greater.

DETECTION:

Manual:

Occupied 50% of time in port and 70% of time at sea.

Automatic:

Rate of temperature rise detection system (RR) Photo electric smoke detection system (P)

FIRST AID FIRE PROTECTION:

3 Hand portable carbon dioxide fire extinguisher

AUTOMATED FIRE PROTECTION SYSTEMS:

2 Aqueous potassium carbonate

MANUAL FIRE FIGHTING EQUIPMENT:

Compartment: 1-105-0-Q GALLEY

	iers ompts ID and Name)		D/H	Area- sq.ft.			%heat rel
1-100-0-LP	PASSAGE	ผู้เ	1	26.0	25	60	25
1-100-0-LP	PASSAGE	ผู่3	0	33 / 8	25	60	25
1-100-0-LP	PASSAGE	พз	0	169.0	25	60	25
1-100-0-LP	PASSAGE	W3	0	408.2	25	60	25
1-100-2-LP	PASSAGE	ผ3	1	497.9	25	60	25
1-119-1-Q	SCULLERY	ωз	0	39.0	25	60	25
1-119-1-Q	SCULLERY	W3	1	182.0	25	60	25
1-132-1-Q	INCINERATOR ROOM	ผ3	0	52.0	25	60	25
1-132-1-Q	INCINERATOR ROOM	พз	0	65 · 0	25	60	25
1-132-1-Q	INCINERATOR ROOM	WЗ	0	71.5	25	60	25
1-138-1-T	DUMB WAITER	W5	- 1	49 . 4	5	80	5
1-138-1-T	DUMB WAITER	ພ5	0	52.0	5	80	5
1-145-0-TU	UPTAKE 1	we	0	208.0	80	100	5
1-145-2-TS	STAIRCASE	W5	٥	78.0	5	80	5
2-100-0-LP	PASSAGE	F3	0	132.0	25	300	5 5
2-100-1-L	CREW BERTHING	F3	0	93.3	25	300	5
2-100-2-L	CREW BERTHING	F 3	0	219.9	25	300	5
2-111-1-LW		F3	0	80.7	25		5
2-111-2-LW	WR WC & SHR	F3	0	105.0	25		5 5
2-121-1-LW	WR WC & SHR	F3	0	90.0	25	300	5
2-121-2-LW	WR WC & SHR	F3	Ō	105.0	25	300	5
2-121-3-L	CREW BERTHING	F3	ō	40.0	25	300	5
2-121-4-L	CREW BERTHING	F3	Ŏ	319.6	25	300	5
91-100-0-LL		C3	Õ	881.4	10	100	5
01-100-0-LE		C3	0	228.1	10	100	5
01-100-2-EF 01-126-1-Q	OFFICER PANTRY	C3	n	75.2	10	100	5

Compartment: 1-119-1-Q SCULLERY

MCE: O Grass negally uncompand: engineering electronics galleus

USE: Q Areas usually unoccupied: engineering, electronics, galleys

AREA: 182 sq.ft. DECK HEIGHT: 13.0 ft. VOLUME: 2,366 cu.ft.

UNACCEPTABLE LOSS: Code 8 (All compartments of one type lost to fire) THRESHOLD FREQUENCY OF UNACCEPTABLE LOSS: 0.1000 per ship year

FREQUENCY OF ESTABLISHED BURNING: 0.0021

FUEL LOAD: 4,000 BTUs/sq.ft.

UENTILATION: 1,183 cu ft/min EXCHANGE TIME: 2.0 min.

UENT AREA: 225 sq.in. UENT HEIGHT: 90 in.

FIRE STARTED DUE TO: Ī FRI A Time l 100 999 20 Fire Origin Thar Failure 100 999 40 1 0 50 Dbar Failure 0 * calculated as (100 - % Heat Release)/100 X

* calculated as (100 - % Heat Release)/100 X FRI Time or 2 min., whichever is greater.

DETECTION:

Manual:

Occupied 50% of time in port and 70% of time at sea.

Automatic:

Rate of temperature rise detection system (RR) Photo electric smoke detection system (P)

FIRST AID FIRE PROTECTION:

1 Hand portable carbon dioxide fire extinguisher

AUTOMATED FIRE PROTECTION SYSTEMS:

MANUAL FIRE FIGHTING EQUIPMENT:

Compartment: 1-119-1-Q SCULLERY

Barriers (Adjoining Compts ID and Name)		Mat ID	D/H	Area- sq.ft.	Tbar	Dbar	%heat rel
1-100-0-LP 1-100-3-LP	PASSAGE PASSAGE	W3	0	130.0	25	60	25
1-100-3-LF 1-105-0-Q 1-105-0-Q	GALLEY GALLEY	M3 M3	0 1	182.0 39.0 182.0	25 25 25	60 60 60	25 25 25
1-132-1-Q 2-100-1-L	INCINERATOR ROOM CREW BERTHING	W3 F3	0	169.0 26.0	25 25	60 300	25 5
2-121-1-LW 2-121-3-L	WR WC & SHR CREW BERTHING	F3 F3	Ö O	15.0 141.0	25 25	300	5 5
01-100-0-LL 01-114-1-LP	WARDROOM & LOUNGE PASSAGE	C3	0	72.0 56.0	10 10	100	5 5
01-126-1-Q	OFFICER PANTRY	C3	Ō	54.0	10	100	5

Compartment: 1-124-2-LL CPO MESSROOM & LOUNGE

USE: LL Lounge areas

AREA: 764 sq.ft. DECK HEIGHT: 13.0 ft. UOLUME: 9,938 cu.ft.

UNACCEPTABLE LOSS: Code 4 (2 compartments of one type lost to fire) THRESHOLD FREQUENCY OF UNACCEPTABLE LOSS: 0.1000 per ship year

FREQUENCY OF ESTABLISHED BURNING: 0.0012

FUEL LOAD: 24,800 BTUs/sq.ft.

From Lounge Burnout Rpt. 000278

UENTILATION: 2,484 cu ft/min EXCHANGE TIME:
UENT AREA: 800 sg.in. UENT HEIGHT: 90 4.0 min.

UENT HEIGHT: 90 in. UENT AREA: 800 sq.in.

FIRE STARTED DUE TO:	1	I	FRI Time	А	М
Fire Origin	 	20	10	0	30
Tbar Failure	l l	15	10	0	40
Dbar Failure	l l	5	*	0	0

* calculated as (100 - % Heat Release)/100 X FRI Time or 2 min., whichever is greater.

DETECTION:

Manual:

Occupied 10% of time in port and 40% of time at sea.

Automatic:

Rate of temperature rise detection system (RR) Photo electric smoke detection system (P)

FIRST AID FIRE PROTECTION:

1 Hand portable monoammonium phosphate fire extinguisher

AUTOMATED FIRE PROTECTION SYSTEMS:

MANUAL FIRE FIGHTING EQUIPMENT:

Compartment: 1-124-2-LL CPO MESSROOM & LOUNGE

	Barriers (Adjoining Compts ID and Name)		D/H	Area- sq.ft.	Tbar	Dbar	%heat rel
1-100-2-LP 1-100-6-Q	PASSAGE SHIP LIBRARY	₩2 ₩2	2 0	484.9 266.5	25 25		30 30
1-162-2-LP 1-162-4-Q	PASSAGE	พ <i>ร</i> พธ พธ	0	26.0 130.0	10 10		5 5
1-162-6-A 2-100-0-LP		W6 F3	0	110.5 24.6	10 25	100	5 5
2-100-4-L 2-125-2-LW		F3 F3	0	46.5 60.0	25	300	5 5
2-130-2-Q0 2-146-2-Q	EXO OFFICE ENGINEERING LOG & DAMAGE	F3 F3	0 0	270.0 293.4	25 25		5 5
01-100-2-LP 01-113-2-L	PASSAGE CPO BERTHING	C3	0 0	70.0 12.0	10 10	100 100	5 5
01-117-2-LW 01-125-2-LW	WR WC & SHR WR WC & SHR	C3	0	2.0 16.0	10 10	100	5 5
01-142-2-L	CPO BERTHING CPO BERTHING	C3	0	152.0 224.4	10	100	5 5
01-154-2-LW	WR WC & SHR	C3	0 	46 . 8	10	100	5

Compartment: 1-132-1-Q INCINERATOR ROOM

USE: Q Areas usually unoccupied: engineering, electronics, galleys

AREA: 255 sq.ft. DECK HEIGHT: 13.0 ft. VOLUME: 3,320 cu.ft.

UNACCEPTABLE LOSS: Code 8 (All compartments of one type lost to fire)

THRESHOLD FREQUENCY OF UNACCEPTABLE LOSS: 0.1000 per ship year

FREQUENCY OF ESTABLISHED BURNING: 0.0033

FUEL LOAD: 5,277 BTUs/sq.ft.

Class A materials - (0.5gpm x 6/compartment area)

UENTILATION: 1,660 cu ft/min EXCHANGE TIME: 2.0 min.

UENT AREA: 10 sq.in. UENT HEIGHT: 1 in.

FIRE STARTED DUE TO:	1	I	FRI Time	A	М
Fire Origin		20	 3	80	10
Tbar Failure	ſ	60	3	50	30
Dbar Failure	1	30	*	0	0

* calculated as (100 - % Heat Release)/100 X FRI Time or 2 min., whichever is greater.

DETECTION:

Manual:

Occupied 25% of time in port and 5% of time at sea.

Automatic:

Photo electric smoke detection system (P)

FIRST AID FIRE PROTECTION:

1 Hand portable dry chemical fire extinguisher (PKP)

AUTOMATED FIRE PROTECTION SYSTEMS:

1 AFFF (3%) sprinkler system - remotely actuated

MANUAL FIRE FIGHTING EQUIPMENT:

- 1 1 1/2" Seawater hand line with "all purpose nozzle" 50 ft.
- 1 1 1/2" AFFF (3%) hand line with SFL variable nozzle 100 ft.

Compartment: 1-132-1-Q INCINERATOR ROOM

Barriers (Adjoining Compts ID and Name)		Mat D/H ID		Area- sq.ft.	Tbar	Dbar	%heat rel
1-100-3-LP 1-105-0-Q 1-105-0-Q 1-105-0-Q 1-119-1-Q 1-138-1-T 1-138-1-T 1-145-0-TU 1-145-1-T 2-100-0-LP 2-121-3-L	PASSAGE GALLEY GALLEY GALLEY SCULLERY DUMB WAITER DUMB WAITER UPTAKE 1 MACHINERY HOIST ROOM PASSAGE CREW BERTHING	W2 W3 W3 W3 W3 W5 W5 W5 W8	1 0 0 0 0 0	172.9 52.0 65.0 71.5 169.0 49.4 52.0 208.0 78.0 124.0	25 25 25 25 25 25 5 80 5 25	40 60 60 60 80 80 100 80 300	30 25 25 25 25 5 5 5
01-114-1-LP 01-126-1-Q	PASSAGE OFFICER PANTRY	C3	0	125.2 130.2	10 10	100 100	5 5

Compartment: 1-138-1-T DUMB WAITER

USE: T Elevators, dumb waiters

AREA: 15 sq.ft. DECK HEIGHT: 13.0 ft. VOLUME: 197 cu.ft.

UNACCEPTABLE LOSS: Code 8 (All compartments of one type lost to fire)

THRESHOLD FREQUENCY OF UNACCEPTABLE LOSS: 1.0000 per ship year

FREQUENCY OF ESTABLISHED BURNING: 0.0001

FUEL LOAD: 4,000 BTUs/sq.ft.

Accumulated dust and grease and cable insulation

VENTILATION: 98 cu ft/min EXCHANGE TIME: 2.0 min.

UENT AREA: 10 sq.in. UENT HEIGHT: 1 in.

FIRE	STARTED	DUE	TO:	1	I	FRI Time	A	М
F	ire Orio	in		1	100	999	0	30
	bar Fai			1	100	999	8	40
Γ	bar Fail	lure		1	30	*	0	0

* calculated as (100 - % Heat Release)/100 X FRI Time or 2 min., whichever is greater.

DETECTION:

Manual:

Occupied 5% of time in port and 5% of time at sea.

Automatic:

AUTOMATED FIRE PROTECTION SYSTEMS:

MANUAL FIRE FIGHTING EQUIPMENT:

Compartment: 1-138-1-T DUMB WAITER

ΙD		Area- sq.ft.	ingi	DDar	%heat rel
W5 W5 W5 W5 F3 F3	1 0 0 0 0 0	49.4 52.0 49.4 52.0 8.0 7.2 15.2	5 5 5 25 25	80 80 80 80 300 300	5 5 5 5 5 5 5
	W5 W5 W5 F3 F3	W5 1 W5 0 W5 0 W5 0 F3 0 F3 0	W5 1 49.4 W5 0 52.0 W5 0 49.4 W5 0 52.0 F3 0 8.0 F3 0 7.2	W5 1 49.4 5 W5 0 52.0 5 W5 0 49.4 5 W5 0 52.0 5 F3 0 8.0 25 F3 0 7.2 25	W5 1 49.4 5 80 W5 0 52.0 5 80 W5 0 49.4 5 80 W5 0 52.0 5 80 F3 0 8.0 25 300 F3 0 7.2 25 300

Compartment: 1-145-1-T MACHINERY HOIST ROOM

USE: T Elevators, dumb waiters

AREA: 48 sq.ft. DECK HEIGHT: 13.0 ft. VOLUME: 624 cu.ft.

UNACCEPTABLE LOSS: Code 8 (All compartments of one type lost to fire)

THRESHOLD FREQUENCY OF UNACCEPTABLE LOSS: 1.0000 per ship year

FREQUENCY OF ESTABLISHED BURNING: 0.0001

FUEL LOAD: 12,000 BTUs/sq.ft.

Accumulated dust and grease and cable insulation

VENTILATION: 312 cu ft/min EXCHANGE TIME: 2.0 mi

UENT AREA: 10 sq.in. UENT HEIGHT: 1 in.

FIRE STARTED DUE TO:	ŧ	I	FRI Time	A	М
Fire Origin		100	999	0	30
Tbar Failure	i	100	999	0	40
Dhar Failure	j	30	*	0	O

* calculated as (100 - % Heat Release)/100 X FRI Time or 2 min., whichever is greater.

DETECTION:

Manual:

Occupied 5% of time in port and 5% of time at sea.

Automatic:

Photo electric smoke detection system (P)

AUTOMATED FIRE PROTECTION SYSTEMS:

MANUAL FIRE FIGHTING EQUIPMENT:

Compartment: 1-145-1-T MACHINERY HOIST ROOM

Barr: (Adjoining Co	iers ompts ID and Name)	Mat ID	D/H	Area- sq.ft.	Tbar	Dbar	%heat rel
1-100-3-LP 1-132-1-Q 1-145-0-TU 1-154-1-A 2-100-0-LP 2-145-1-T 01-114-1-LP 01-153-1-A	PASSAGE INCINERATOR ROOM UPTAKE 1 STOREROOM PASSAGE MACHINERY HOIST PASSAGE STOREROOM	ພ5 ພ5 ພ5 ເນ5 F3 C3 C3	1 0 0 0 0 1 0	104.0 78.0 104.0 78.0 1.2 46.8 46.2 1.8	5 80 5 25 25 10	300 300	5 5 5 5 5 5 5 5 5 5 5
			2				

Compartment: 1-145-2-TS STAIRCASE

USE: TS Staircases

96 sq.ft. DECK HEIGHT: 13.0 ft. UOLUME: 1,248 cu.ft. AREA:

UNACCEPTABLE LOSS: Code 8 (All compartments of one type lost to fire)

THRESHOLD FREQUENCY OF UNACCEPTABLE LOSS: 0.1000 per ship year

FREQUENCY OF ESTABLISHED BURNING: 0.0001

800 BTUs/sq.ft. FUEL LOAD: Paint-no carpet or laminate

249 cu ft/min EXCHANGE TIME: UENTILATION: 5.0 min.

UENT AREA: 10 sq.in. UENT HEIGHT: 1 in.

FRI A FIRE STARTED DUE TO: I 1 Time 1 100 999 0 Fire Origin 30 Thar Failure (100 999 0 40 Dbar Failure 90 * 0 Ω * calculated as (100 - % Heat Release)/100 X FRI Time or 2 min., whichever is greater.

DETECTION:

Manual:

Occupied 30% of time in port and 50% of time at sea. Automatic:

AUTOMATED FIRE PROTECTION SYSTEMS:

MANUAL FIRE FIGHTING EQUIPMENT:

Compartment: 1-145-2-TS STAIRCASE

Barriers (Adjoining Compts ID and Name)	Mat ID	D∕H	Area- sq.ft.	Tbar	Dbar	%heat rel
1-100-2-LP PASSAGE 1-105-0-Q GALLEY 1-145-0-TU UPTAKE 1 1-162-2-LP PASSAGE 2-100-0-LP PASSAGE 2-145-2-TS STAIRCASE 2-157-2-A GEAR LOCKER 01-100-2-LP PASSAGE 01-145-2-TS STAIRCASE	W5 W8 W6 F3 F3 C3	1 0 0 0 0 1 0	208.0 78.0 208.0 78.0 10.8 66.0 19.2 25.8 70.2	5 80 10 25 25 10	80 80 100 100 300 300 300 100	555555555

Compartment: 1-154-1-A STOREROOM

Storerooms

USE: AS

AREA: 48 sq.ft. DECK HEIGHT: 13.0 ft. VOLUME: 624 cu.ft.

UNACCEPTABLE LOSS: Code 4 (2 compartments of one type lost to fire) THRESHOLD FREQUENCY OF UNACCEPTABLE LOSS: 0.3300 per ship year

FREQUENCY OF ESTABLISHED BURNING: 0.0009

FUEL LOAD: 2,080,000 BTUs/sq.ft.

Boxes of flammable stores--Fuel load in psf = 20 x height of deck

UENTILATION: 62 cu ft/min EXCHANGE TIME: 10.0 min.

UENT AREA: 10 sq.in. UENT HEIGHT: 1 in.

FIRE STARTED DUE TO: I FRI 1 Time 1 30 3 0 Fire Origin 30 Tbar Failure 1 20 3 0 20 Dbar Failure 10 Û 1 * 0

* calculated as (100 - % Heat Release)/100 X FRI Time or 2 min., whichever is greater.

DETECTION:

Manual:

Occupied 5% of time in port and 5% of time at sea.

Automatic:

Rate of temperature rise detection system (RR) Photo electric smoke detection system (P)

AUTOMATED FIRE PROTECTION SYSTEMS:

MANUAL FIRE FIGHTING EQUIPMENT:

Compartment: 1-154-1-A STOREROOM

	iers Compts ID and Name)	Mat ID	D∕H	Area- sq.ft.	Tbar	Dbar	%heat rel
1-100-3-LP 1-145-0-TU 1-145-1-T 1-162-1-TS 2-145-1-T 2-154-1-A	PASSAGE UPTAKE 1 MACHINERY HOIST ROOM STAIRCASE MACHINERY HOIST STOREROOM	W2 W5 W6 F3 F3	1 0 0 0 0	104.0 104.0 78.0 78.0 1.2 46.8	25 80 5 10 25 25	40 100 80 100 300 300	30 55 55 55 55
01-153-1-A	STOREROOM	C3	0	48.0	10		100

Compartment: 1-162-1-TS STAIRCASE

USE: TS Staircases

AREA: 76 sq.ft. DECK HEIGHT: 13.0 ft. VOLUME: 990 cq.ft.

UNACCEPTABLE LOSS: Code 8 (All compartments of one type lost to fire) THRESHOLD FREQUENCY OF UNACCEPTABLE LOSS: 0.1000 per ship year

FREQUENCY OF ESTABLISHED BURNING: 0.0001

FUEL LOAD: 800 BTUs/sq.ft. Paint-no carpet or laminate

198 cu ft/min EXCHANGE TIME: sq.in. UENT HEIGHT: 1 UENTILATION: 5.0 min.

UENT AREA: 10 sq.in. 1 in.

FIRE STARTED DUE TO: 1 I FRI A i Time Fire Origin 1 100 999 0 30 I 100 999 0 40 Thar Failure Dbar Failure 90 0

* calculated as (100 - % Heat Release)/100 X FRI Time or 2 min., whichever is greater.

DETECTION:

Manual:

Occupied 30% of time in port and 50% of time at sea. Automatic:

AUTOMATED FIRE PROTECTION SYSTEMS:

MANUAL FIRE FIGHTING EQUIPMENT:

Compartment: 1-162-1-TS STAIRCASE

Barr: (Adjoining Co	iers ompts ID and Name)	Mat ID	D∕H	Area- sq.ft.	Tbar	Dbar	%heat rel
1-154-1-A	STOREROOM	ພຣ	0	78.0	10	100	5
1-162-0-TU	UPTAKE 2	ພຣ	0	208.0	80	100	5
1-162-3-LP	PASSAGE	ພຣ	1	208.0	5	80	5
1-178-1-E	BOILER ROOM UPPER LEVEL	W6	0	78 . 0	10	100	5
2-162-1-TS	STAIRCASE	F3	1	96 . 0	25	300	5
01-162-1-TS	STAIRCASE	C3	1	76 . 2	10	100	5
01-162-3-LP	PASSAGE	C3	0	19.8	10	100	5

Compartment: 1-162-2-LP PASSAGE

Zero strength barrier adjacent.

USE: LP Passageways

AREA: 259 sq.ft. DECK HEIGHT: 13.0 ft. VOLUME: 3,372 cu.ft.

UNACCEPTABLE LOSS: Code 8 (All compartments of one type lost to fire)

THRESHOLD FREQUENCY OF UNACCEPTABLE LOSS: 0.1000 per ship year

FREQUENCY OF ESTABLISHED BURNING: 0.0001

FUEL LOAD: 3,200 BTUs/sq.ft.

Paint, cable insulation laminate on blkhds-no dropped ceiling

UENTILATION: 674 cu ft/min EXCHANGE TIME: 5.0 min.

UENT AREA: 750 sq.in. UENT HEIGHT: 12 in.

FIRE STARTED DUE TO:	1	I	FRI Time	A	М
Fire Origin	(95	20	0	40
Tbar Failure	1	80	20	0	60
Dbar Failure	1	40	*	0	0

* calculated as (100 - % Heat Release)/100 X FRI Time or 2 min., whichever is greater.

DETECTION:

Manual:

Occupied 30% of time in port and 50% of time at sea.

Automatic:

Photo electric smoke detection system (P)

FIRST AID FIRE PROTECTION:

1 Hand portable dry chemical fire extinguisher (PKP)

AUTOMATED FIRE PROTECTION SYSTEMS:

MANUAL FIRE FIGHTING EQUIPMENT:

- 1 1 1/2" Seawater hand line with "all purpose nozzle" 50 ft.
- 1 1 1/2" AFFF (3%) hand line with SFL variable nozzle 50 ft.

Compartment: 1-162-2-LP PASSAGE

1-100-2-LP PASSAGE W6 1 52.0 10 100	
1-124-2-LL CPO MESSROOM & LOUNGE W6 0 26.0 10 100 1-145-2-TS STAIRCASE W6 0 78.0 10 100 1-162-0-TU UPTAKE 2 W8 0 100.1 80 100	5 5 5
1-162-4-Q SHIP STORE W2 1 208.0 25 40 1-169-2-T MACHINERY HOIST ROOM W5 0 78.0 5 80 1-169-2-T MACHINERY HOIST ROOM W5 1 107.9 5 80	30 5 5
1-178-2-E BOILER ROOM UPPER LEVEL W6 0 26.0 10 100 1-178-2-E BOILER ROOM UPPER LEVEL W6 0 380.9 10 100 1-178-4-Q0 SUPPLY OFFICE W2 1 269.1 25 40	5 5 30
1-198-2-QO SHIP OFFICE W2 1 111.8 25 40 1-207-2-LP PASSAGE W0 0 52.0 0 0 2-162-2-LP PASSAGE F3 0 259.4 25 300	30 100 5
01-162-2-LP PASSAGE C3 0 95.4 10 100 01-162-4-LW WR WC & SHR C3 0 30.8 10 100 01-162-6-L CPO BERTHING C3 0 16.0 10 100 01-178-2-W ROLL STABILIZATION TANK C3 0 117.2 10 100	5 5 5

5

Compartment: 1-162-3-LP PASSAGE

Zero strength barrier adjacent.

USE: LP Passageways

AREA: 405 sq.ft. DECK HEIGHT: 13.0 ft. VOLUME: 5,265 cu.ft.

UNACCEPTABLE LOSS: Code 8 (All compartments of one type lost to fire)

THRESHOLD FREQUENCY OF UNACCEPTABLE LOSS: 0.1000 per ship year

FREQUENCY OF ESTABLISHED BURNING: 0.0001

FUEL LOAD: 3,200 BTUs/sq.ft.

Paint, cable insulation laminate on blkhds-no dropped ceiling

UENTILATION: 1,053 cu ft/min EXCHANGE TIME: 5.0 min.

UENT AREA: 1500 sq.in. UENT HEIGHT: 12 in.

FIRE STARTED DUE TO:	 	I	FRI Time	A	М
Fire Origin	· · ·	95	20	0	40
Tbar Failure	ı	80	20	0	60
Dbar Failure	l l	40	*	0	0

* calculated as (100 - % Heat Release)/100 X FRI Time or 2 min., whichever is greater.

DETECTION:

Manual:

Occupied 30% of time in port and 50% of time at sea.

Automatic:

Photo electric smoke detection system (P)

FIRST AID FIRE PROTECTION:

1 Hand portable dry chemical fire extinguisher (PKP)

AUTOMATED FIRE PROTECTION SYSTEMS:

MANUAL FIRE FIGHTING EQUIPMENT:

- 1 1 1/2" Seawater hand line with "all purpose nozzle" 50 ft.
- 1 1 1/2" AFFF (3%) hand line with SFL variable nozzle 50 ft.

Compartment: 1-162-3-LP PASSAGE

				~		
	Mat ID	D∕H	Area- sq.ft.	Tbar	Dbar	%heat rel
PASSAGE	W6	1	52.0	10	100	5
CREW MESS	W6	0	26.0	10	100	5
STAIRCASE	W 5	1	208.0	5	80	5
WARD BATH	ωз	0	139.1	25	60	25
MEDICAL TREATMENT & EXAMI	W2	3	344.5	25	40	30
BOILER ROOM UPPER LEVEL	พธ	0	26.0	10	100	5
BOILER ROOM UPPER LEVEL	ωe	0	312.0	10	100	5
BOILER ROOM UPPER LEVEL	W6	1	380.9	10	100	5
MEDICAL STORES	W2	_	110.5	25	40	30
STOREROOM	W2	_	84.5	25	40	30
Passage		-		0	0	100
- - ·	W2	0			40	30
	W2	1			40	30
-		-				30
		_				30
		_				25
		_				30
~		-				30
		_				5
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						5
		-				5
		-				5
PASSAGE	C3	U	31.8	10	100	5
	STAIRCASE WARD BATH MEDICAL TREATMENT & EXAMI BOILER ROOM UPPER LEVEL BOILER ROOM UPPER LEVEL BOILER ROOM UPPER LEVEL MEDICAL STORES STOREROOM PASSAGE SMALL ARMS STOW & REPAIR BARBER SHOP GEAR LOCKER WC & WR Q.M. SHELTER Q.M. SHELTER AFT REPAIR NO.3 & DAMAGE STAIRCASE PASSAGE GRAVIMETER ROOM COMPUTER/NAU LAB PASSAGE ARCTIC GEAR LOCKEROFFIC	PASSAGE CREW MESS STAIRCASE WARD BATH MEDICAL TREATMENT & EXAMI W2 BOILER ROOM UPPER LEVEL BOILER ROOM UPPER LEVEL M6 MEDICAL STORES STOREROOM PASSAGE SMALL ARMS STOW & REPAIR W2 BARBER SHOP GEAR LOCKER W2 GEAR LOCKER W2 GEAR LOCKER W2 WC & WR Q.M. SHELTER Q.M. SHELTER Q.M. SHELTER Q.M. SHELTER AFT REPAIR NO.3 & DAMAGE STAIRCASE PASSAGE GRAVIMETER ROOM COMPUTER/NAV LAB PASSAGE ARCTIC GEAR LOCKEROFFIC C3 ROLL STABILIZATION TANK C3	PASSAGE W6 1 CREW MESS W6 0 STAIRCASE W5 1 WARD BATH W3 0 MEDICAL TREATMENT & EXAMI W2 3 BOILER ROOM UPPER LEVEL W6 0 BOILER ROOM UPPER LEVEL W6 1 MEDICAL STORES W2 1 STOREROOM W2 1 PASSAGE W0 0 SMALL ARMS STOW & REPAIR W2 0 BARBER SHOP W2 1 GEAR LOCKER W2 0 GEAR LOCKER W2 1 WC & WR W3 1 Q.M. SHELTER W2 0 Q.M. SHELTER W2 0 AFT REPAIR NO.3 & DAMAGE W6 1 STAIRCASE F3 0 GRAVIMETER ROOM F3 0 COMPUTER/NAV LAB F3 0 PASSAGE C3 0 ARCTIC GEAR LOCKEROFFIC C3 0 ROLL STABILIZATION TANK C3 0	PASSAGE	PASSAGE	PASSAGE

Compartment: 1-162-4-Q SHIP STORE

USE: Q Areas usually unoccupied: engineering, electronics, galleys

AREA: 205 sq.ft. DECK HEIGHT: 13.0 ft. VOLUME: 2,666 cu.ft.

UNACCEPTABLE LOSS: Code 8 (All compartments of one type lost to fire)

THRESHOLD FREQUENCY OF UNACCEPTABLE LOSS: 1.0000 per ship year

FREQUENCY OF ESTABLISHED BURNING: 0.0006

FUEL LOAD: 32,000 BTUs/sq.ft.

UENTILATION: 296 cu ft/min EXCHANGE TIME: 9.0 min.

UENT AREA: 175 sq.in. UENT HEIGHT: 1 in.

FIRE STARTED DUE TO:	1	I	FRI Time	A	М
Fire Origin	1	20	3	0	20
Tbar Failure	1	15	3	0	40
Dbar Failure	1	5	*	0	0

* calculated as (100 - % Heat Release)/100 X FRI Time or 2 min., whichever is greater.

DETECTION:

Manual:

Occupied 10% of time in port and 10% of time at sea.

Automatic:

Rate of temperature rise detection system (RR) Photo electric smoke detection system (P)

FIRST AID FIRE PROTECTION:

1 Hand portable monoammonium phosphate fire extinguisher

AUTOMATED FIRE PROTECTION SYSTEMS:

MANUAL FIRE FIGHTING EQUIPMENT:

Compartment: 1-162-4-Q SHIP STORE

Mat I ID)∕H	Area- sq.ft.	Tbar	Dbar	%heat rel
W2 DM W2 DM W2 W2 CCE W2 F3 C3 C3	0 1 0 1 0 0 0	130.0 208.0 110.5 139.1 104.0 136.5 202.4 51.6	25 25 10 10	100 40 40 40 40 300 100	5 30 30 30 30 5 5 5
)(ID INGE W6 W2 DOM W2 DOM W2 VICE W2 F3 C3	NGE W6 0 W2 1 DOM W2 0 DOM W2 1 W2 0 F3 0 C3 0 C3 0	ID sq.ft. INGE	ID sq.ft. INGE W6 0 130.0 10 W2 1 208.0 25 OOM W2 0 110.5 25 OOM W2 1 139.1 25 W2 0 104.0 25 F3 0 202.4 25 C3 0 51.6 10 C3 0 7.7 10	ID sq.ft. INGE W6 0 130.0 10 100 W2 1 208.0 25 40 OOM W2 0 110.5 25 40 OOM W2 1 139.1 25 40 W2 0 104.0 25 40 VICE W2 0 136.5 25 40 F3 0 202.4 25 300 C3 0 51.6 10 100 C3 0 7.7 10 100

2

Compartment: 1-162-5-LW WARD BATH

USE: LW Wash room, water closet and shower areas

AREA: 98 sq.ft. DECK HEIGHT: 13.0 ft. UOLUME: 1,274 cu.ft.

UNACCEPTABLE LOSS: Code 8 (All compartments of one type lost to fire)

THRESHOLD FREQUENCY OF UNACCEPTABLE LOSS: 0.1000 per ship year

FREQUENCY OF ESTABLISHED BURNING: 0.0002

FUEL LOAD: 4,000 BTUs/sq.ft.

UENTILATION: 318 cu ft/min EXCHANGE TIME: 4.0 min.

UENT AREA: 200 sq.in. UENT HEIGHT: 90 in.

FIRE STARTED DUE TO: | I FRI A M Time

Fire Origin | 100 999 0 30
Thar Failure | 100 999 0 40
Dbar Failure | 35 * 0 0

* calculated as (100 - % Heat Release)/100 X FRI Time or 2 min., whichever is greater.

DETECTION:

Manual:

Occupied 5% of time in port and 15% of time at sea.

Automatic:

AUTOMATED FIRE PROTECTION SYSTEMS:

MANUAL FIRE FIGHTING EQUIPMENT:

Compartment: 1-162-5-LW WARD BATH

Barr (Adjoining C	iers ompts ID and Name)	Mat ID	D∕H	Area- sq.ft.	Tbar	Dbar	%heat rel
1-100-5-LL 1-162-3-LP 1-162-7-L 1-174-1-L 1-174-1-L 1-174-1-L	CREW MESS PASSAGE WARD NO.1 MEDICAL TREATMENT & EXAMI MEDICAL TREATMENT & EXAMI MEDICAL TREATMENT & EXAMI	WЗ	0 0 0 0 1	130.0 139.1 100.1 39.0 39.0 91.0	10 25 25 25 25 25	100 60 60 60 60	5 25 25 25 25 25
2-162-5-Q 01-162-5-A	SHIP LAUNDRY ARCTIC GEAR LOCKEROFFIC	F3	0	98.0 98.0	25 10	300 100	5 5

Compartment: 1-162-6-A SHIP STORE STOREROOM

USE: AS Storerooms

AREA: 91 sq.ft. DECK HEIGHT: 13.0 ft. VOLUME: 1,183 cu.ft.

UNACCEPTABLE LOSS: Code 4 (2 compartments of one type lost to fire) THRESHOLD FREQUENCY OF UNACCEPTABLE LOSS: 0.3300 per ship year

FREQUENCY OF ESTABLISHED BURNING: 0.0009

FUEL LOAD: 2,080,000 BTUs/sq.ft.

Boxes of flammable stores -- Fuel load in psf = 20 x height of deck

UENTILATION: 118 cu ft/min EXCHANGE TIME: 10.0 min.

UENT AREA: 10 sq.in. UENT HEIGHT: 1 in.

FIRE STARTED DUE TO:	I FRI A Time	4
Fire Origin	1 30 4 0	30
Tbar Failure	1 20 4 0	20
Dhar Failure	1 10 * 0	0

* calculated as (100 - % Heat Release)/100 X FRI Time or 2 min., whichever is greater.

DETECTION:

Manual:

Occupied 15% of time in port and 15% of time at sea.

Automatic:

Rate of temperature rise detection system (RR) Photo electric smoke detection system (P)

AUTOMATED FIRE PROTECTION SYSTEMS:

MANUAL FIRE FIGHTING EQUIPMENT:

Compartment: 1-162-6-A SHIP STORE STOREROOM

Barr (Adjoining C	iers ompts ID and Name)	Mat ID	D∕H	Area- sq.ft.	Tbar	Dbar	%heat rel
1-124-2-LL 1-162-4-Q 1-162-4-Q 2-162-4-Q 01-162-6-L	CPO MESSROOM & LOUNGE SHIP STORE SHIP STORE MACHINE SHOP CPO BERTHING	ա6 ա2 ա2 F3 C3	0 0 1 0	110.5 110.5 139.1 85.6 21.4	10 25 25 25 10	100 40 40 300 100	5 30 30 5 5

1

Compartment: 1-162-7-L WARD NO.1

USE: L2 Berthing Space for 2

AREA: 90 sq.ft. DECK HEIGHT: 13.0 ft. VOLUME: 1,181 cu.ft.

UNACCEPTABLE LOSS: Code 7 (5 compartments of one type lost to fire) THRESHOLD FREQUENCY OF UNACCEPTABLE LOSS: 0.1000 per ship year

FREQUENCY OF ESTABLISHED BURNING: 0.0008

FUEL LOAD: 35,199 BTUs/sq.ft. No. of people x 200/compt.area

UENTILATION: 393 cu ft/min EXCHANGE TIME: UENT AREA: 175 sq.in. UENT HEIGHT: 90 in. 3.0 min.

FIRE STARTED DUE TO: l I FRI Time Fire Origin 1 20 4 0 Tbar Failure 4 0 1 15 40 Dbar Failure 5 * 0 0

 \star calculated as (100 - % Heat Release)/100 X FRI Time or 2 min., whichever is greater.

DETECTION:

Manual:

Occupied 0% of time in port and 10% of time at sea.

Automatic:

Rate of temperature rise detection system (RR) Photo electric smoke detection system (P)

AUTOMATED FIRE PROTECTION SYSTEMS:

MANUAL FIRE FIGHTING EQUIPMENT:

Compartment: 1-162-7-L WARD NO.1

Barr (Adjoining C	iers ompts ID and Name)	Mat ID	D∕H	Area- sq.ft.	Tbar	Dbar	%heat rel
1-100-5-LL 1-162-5-LW 1-174-1-L 1-174-3-L 2-162-5-Q 01-162-5-A	CREW MESS WARD BATH MEDICAL TREATMENT & EXAMI WARD NO.2 SHIP LAUNDRY ARCTIC GEAR LOCKEROFFIC	W2 F3	0 0 1 0 0	110.5 100.1 39.0 110.5 85.6 21.4	10 25 25 25 25 10	100 60 40 40 300 100	5 25 30 30 5
			1				

Compartment: 1-169-2-T MACHINERY HOIST ROOM

USE: T Elevators, dumb waiters

AREA: 49 sq.ft. DECK HEIGHT: 13.0 ft. VOLUME: 647 cu.ft.

UNACCEPTABLE LOSS: Code 8 (All compartments of one type lost to fire) THRESHOLD FREQUENCY OF UNACCEPTABLE LOSS: 1.0000 per ship year

FREQUENCY OF ESTABLISHED BURNING: 0.0001

FUEL LOAD: 12,000 BTUs/sq.ft.

Accumulated dust and grease and cable insulation

UENTILATION: 323 cu ft/min EXCHANGE TIME: 2.8 min.
UENT AREA: 19 sq.in. UENT HEIGHT: 1 in.

FIRE STARTED DUE TO: | I FRI A M | Time | | 100 999 0 30 | Thar Failure | 100 999 0 40 | Dhar Failure | 30 * 0 0

* calculated as (100 - % Heat Release)/100 X FRI Time or 2 min., whichever is greater.

DETECTION:

Manual:

Occupied 5% of time in port and 5% of time at sea.

Automatic:

Photo electric smoke detection system (P)

AUTOMATED FIRE PROTECTION SYSTEMS:

MANUAL FIRE FIGHTING EQUIPMENT:

Barr: (Adjoining Co	iers ompts ID and Name)	Mat ID	D∕H	Area- sq.ft.	Tbar	Dbar	%heat rel
1-162-0-TU	UPTAKE 2	We	0	107.9	80	100	5
1-162-2-LP	PASSAGE	W5	0	78.0	5 5	80	5
1-162-2-LP 1-178-2-E	PASSAGE BOILER ROOM UPPER LEVEL	ພ5 ພຣ	0	107.9 78.0	10	80 100	5 5
2-169-2-T	MACHINERY HOIST	F3	1	49.8	25	300	5
01-162-2-LP	PASSAGE	С3	0	49 . 8	10	100	5

2

Compartment: 1-174-1-L MEDICAL TREATMENT & EXAMINATION ROOM

•

USE: L Living quarters/medical/dental areas

AREA: 414 sq.ft. DECK HEIGHT: 13.0 ft. VOLUME: 5,384 cu.ft.

UNACCEPTABLE LOSS: Code 3 (Full compartment lost to fire)

THRESHOLD FREQUENCY OF UNACCEPTABLE LOSS: 0.3300 per ship year

FREQUENCY OF ESTABLISHED BURNING: 0.0008

FUEL LOAD: 20,000 BTUs/sq.ft.

UENTILATION: 1,076 cu ft/min EXCHANGE TIME: 5.0 min.

UENT AREA: 400 sq.in. UENT HEIGHT: 90 in.

- 1 FIRE STARTED DUE TO: I FRI A 1 Time *7* 0 Fire Origin 1 20 30 Thar Failure 7 ł 15 D 40 Dbar Failure ł 5 * Ω Ω

* calculated as (100 - % Heat Release)/100 X FRI Time or 2 min., whichever is greater.

DETECTION:

Manual:

Occupied 40% of time in port and 35% of time at sea.

Automatic:

Rate of temperature rise detection system (RR) Photo electric smoke detection system (P)

FIRST AID FIRE PROTECTION:

2 Hand portable monoammonium phosphate fire extinguisher

AUTOMATED FIRE PROTECTION SYSTEMS:

MANUAL FIRE FIGHTING EQUIPMENT:

Compartment: 1-174-1-L MEDICAL TREATMENT & EXAMINATION ROOM

Barri (Adjoining Co	ers mpts ID and Name)		D/H	Area- sq.ft.	Tbar	Dbar	%heat rel
1-162-3-LP 1-162-5-LW	PASSAGE WARD BATH	พ2 พ3	3	344.5 39.0	25 25	60	30 25
1-162-5-LW 1-162-5-LW 1-162-7-L	WARD BATH WARD BATH WARD NO.1	ພ3 ພ3 ພ2	1 0 1	39.0 91.0 39.0	25 25 25	60 60 40	25 25 30
1-174-3-L 1-174-3-L 1-199-1-L	WARD NO.2 WARD NO.2 MEDICAL STORES	₩2 ₩2	0 1 0	110.5 130.0 169.0	25 25 25	40 40	30 30 30
1-199-3-L 2-162-5-Q 2-180-1-Q	X-RAY DARKROOM SHIP LAUNDRY SELF-SERVICE LAUNDRY	W2 F3 F3	0	71.5 79.0 264.0	25 25 25	300 300	30 5 5
2-195-1-A 01-162-3-LP 01-162-5-A 01-178-3-W	ELECTRICAL STOREROOM PASSAGE ARCTIC GEAR LOCKEROFFIC ROLL STABILIZATION TANK	F3 C3 C3	0 0 0 0	63.0 43.0 19.0 127.2	25 10 10 10	300 100 100 100	5 5 5

COMPARTMENT FIRE SAFETY SUMMARY FOR POLAR ICEBREAKER REPLACEMENT

(drawings dated 5/12/1987)

Compartment: 1-174-3-L WARD NO.2

USE: L2 Berthing Space for 2

85 sq.ft. DECK HEIGHT: 13.0 ft. VOLUME: 1,105 cq.ft. AREA:

UNACCEPTABLE LOSS: Code 7 (5 compartments of one type lost to fire) THRESHOLD FREQUENCY OF UNACCEPTABLE LOSS: 0.1000 per ship year

FREQUENCY OF ESTABLISHED BURNING: 0.0008

FUEL LOAD: 37,664 BTUs/sq.ft.

No. of people x 200/compt.area

UENTILATION: 368 cu ft/min EXCHANGE TIME: UENT AREA: 175 sq.in. UENT HEIGHT: 90 in. 3.0 min.

FIRE STARTED DUE TO: I FRI - 1 Time Fire Origin 1 20 4 0 30 Thar Failure 1 15 4 0 40 Dbar Failure 5 * B Ω

> * calculated as (100 - % Heat Release)/100 X FRI Time or 2 min., whichever is greater.

DETECTION:

Manual:

Occupied 0% of time in port and 10% of time at sea.

Automatic:

Rate of temperature rise detection system (RR) Photo electric smoke detection system (P)

AUTOMATED FIRE PROTECTION SYSTEMS:

MANUAL FIRE FIGHTING EQUIPMENT:

Compartment: 1-174-3-L WARD NO.2

Barr: (Adjoining C	iers ompts ID and Name)	Mat ID	D/H	Area- sq.ft.	Tbar	Dbar	%heat rel
1-162-7-L	WARD NO.1	W2	0	110.5	25	40	30
1-174-1-L	MEDICAL TREATMENT & EXAMI	ω2	0	110.5	25	40	30
1-174-1-L	MEDICAL TREATMENT & EXAMI	W2	1	130.0	25	40	30
2-162-5-Q	SHIP LAUNDRY	F3	0	56.0	25	300	5
2-180-1-Q	SELF-SERVICE LAUNDRY	F3	0	24.0	25	300	5
01-162-3-LP	PASSAGE	C3	0	8.6	10	100	5
01-162-5-A	ARCTIC GEAR LOCKEROFFIC	C3	0	2.0	10	100	5

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COMPARTMENT FIRE SAFETY SUMMARY FOR POLAR ICEBREAKER REPLACEMENT

(drawings dated 5/12/1987)

Compartment: 1-178-1-E BOILER ROOM (MAIN DECK LEVEL)

Zero strength barrier below.

USE: E Machinery areas which are normally occupied.

AREA: 703 sq.ft. DECK HEIGHT: 13.0 ft. VOLUME: 9,141 cu.ft.

UNACCEPTABLE LOSS: Code 4 (2 compartments of one type lost to fire) THRESHOLD FREQUENCY OF UNACCEPTABLE LOSS: 0.0330 per ship year

FREQUENCY OF ESTABLISHED BURNING: 0.0452

FUEL LOAD: 8,556 BTUs/sq.ft.

Paint and miscellaneous (1.2gpm x 6m/compartment area)

UENTILATION: 4,570 cu ft/min EXCHANGE TIME: 2.0 min.

UENT AREA: 500 sq.in. UENT HEIGHT: 70 in.

FIRE STARTED DUE TO:	 	I	FRI Time	A 	M
Fire Origin		8	3	80	10
Tbar Failure	1	15	3	20	40
Dbar Failure	1	0	*	0	0

* calculated as (100 - % Heat Release)/100 X FRI Time or 2 min., whichever is greater.

Assumes a fuel or lube oil line rupture No line rupture as adjacent compartment

DETECTION:

Manual:

Occupied 0% of time in port and 15% of time at sea.

Automatic:

Rate of temperature rise detection system (RR) Photo electric smoke detection system (P) Flame detection system (UV or IR) (F)

FIRST AID FIRE PROTECTION:

2 Hand portable dry chemical fire extinguisher (PKP)

AUTOMATED FIRE PROTECTION SYSTEMS:

1 Halon 1301 total flooding system - remotely actuated

MANUAL FIRE FIGHTING EQUIPMENT:

- 1 1 1/2" Seawater hand line with "all purpose nozzle" 50 ft.
- 2 1 1/2" AFFF (3%) hand line with SFL variable nozzle 50 ft.

Compartment: 1-178-1-E BOILER ROOM (MAIN DECK LEUEL)

Barr (Adjoining C	iers ompts ID and Name)	Mat ID	D∕H	Area- sq.ft.	Tbar	Dbar	%heat rel
1 160 0 777	UDWOVE O	(10		000 0		100	
1-162-0-TU	UPTAKE 2	₩8	0	208.0	80		5
1-162-1-TS	STAIRCASE	W6	0	78.0	10	100	5
1-162-3-LP	PASSAGE	₩6	0	26.0	10	100	5
1-162-3-LP	PASSAGE	W6	0	312.0	10	100	5
1-162-3-LP	PASSAGE	W6	1	380.9	10	100	5
1-178-2-E	BOILER ROOM UPPER LEVEL	₩ 6	1	380.9	10	100	5
2-162-3-LP	PASSAGE	F3	0	2.4	25	300	5
2-178-1-E	BOILER ROOM	FO	0	700.8	0	0	100
01-178-0-W	ROLL STAB TANK CROSS DUCK	C3	0	404.8	10	100	5
01-178-1-LP	PASSAGE	C3	0	181.2	10	100	5
01-178-3-W	ROLL STABILIZATION TANK	C3	0	117.2	10	100	5

Compartment: 1-178-2-E BOILER ROOM (MAIN DECK LEUEL) Zero strength barrier below.

USE: E Machinery areas which are normally occupied.

AREA: 703 sq.ft. DECK HEIGHT: 13.0 ft. VOLUME: 9,141 cq.ft.

UNACCEPTABLE LOSS: Code 4 (2 compartments of one type lost to fire) THRESHOLD FREQUENCY OF UNACCEPTABLE LOSS: 0.0330 per ship year

FREQUENCY OF ESTABLISHED BURNING: 0.0452

FUEL LOAD: 1,914 BTUs/sq.ft.

Paint and miscellaneous

UENTILATION: 4,570 cu ft/min EXCHANGE TIME: 2.0 min.

VENT AREA: 500 sq.in. UENT HEIGHT: 70 in.

| I FRI | Time FIRE STARTED DUE TO: A M Fire Origin Thar Failure 0 3 80 10 0 3 20 40 1 0 ***** 0 Dbar Failure í

> * calculated as (100 - % Heat Release)/100 X FRI Time or 2 min., whichever is greater.

Assumes a fuel or lube oil line rupture No line rupture as adjacent compartment

DETECTION:

Manual:

Occupied 0% of time in port and 15% of time at sea.

Automatic:

Rate of temperature rise detection system (RR) Photo electric smoke detection system (P) Flame detection system (UV or IR) (F)

FIRST AID FIRE PROTECTION:

2 Hand portable dry chemical fire extinguisher (PKP)

AUTOMATED FIRE PROTECTION SYSTEMS:

1 Halon 1301 total flooding system - remotely actuated

MANUAL FIRE FIGHTING EQUIPMENT:

- 1 1 1/2" Seawater hand line with "all purpose nozzle" 50 ft.
- 2 1 1/2" AFFF (3%) hand line with SFL variable nozzle 50 ft.

Compartment: 1-178-2-E BOILER ROOM (MAIN DECK LEVEL)

Barr (Adjoining C	iers ompts ID and Name)	Mat ID	D∕H	Area- sq.ft.	Tbar	Dbar	%heat rel
1-162-0 -T U	UPTAKE 2	ພຣ	0	208.0	80	100	5
1-162-2-LP	PASSAGE	W6	Ō	26.0	10	100	5
1-162-2-LP	PASSAGE	W6	0	380.9	10	100	5
1-169-2-T	MACHINERY HOIST ROOM	W6	0	78.0	10	100	5
1-178-1-E	BOILER ROOM UPPER LEVEL	W6	1	380.9	10	100	5
1-207-2-LP	PASSAGE	W6	1	312.0	10	100	5
2-162-2-LP	PASSAGE	F3	0	2.4	25	300	5
2-178-2-E	BOILER ROOM	FO	0	700.8	0	0	100
01-178-0-W	ROLL STAB TANK CROSS DUCK	C3	Û	586.0	10	100	5
01-178-2-W	ROLL STABILIZATION TANK	C3	0	117.2	10	100	5

Compartment: 1-178-4-QO SUPPLY OFFICE

USE: QO Offices

AREA: 165 sq.ft. DECK HEIGHT: 13.0 ft. VOLUME: 2,152 cu.ft.

UNACCEPTABLE LOSS: Code 8 (All compartments of one type lost to fire)

THRESHOLD FREQUENCY OF UNACCEPTABLE LOSS: 1.0000 per ship year

FREQUENCY OF ESTABLISHED BURNING: 0.0004

FUEL LOAD: 20,000 BTUs/sq.ft.

UENTILATION: 307 cu ft/min EXCHANGE TIME: 7.0 min.

UENT AREA: 175 sq.in. UENT HEIGHT: 90 in.

FIRE STARTED DUE TO:	1	I	FRI Time	A	М
Fire Origin	1	20 15	5 5	0	60 40
Tbar Failure Dbar Failure	ţ	5	⊃ *	0	4u 0

* calculated as (100 - % Heat Release)/100 X FRI Time or 2 min., whichever is greater.

DETECTION:

Manual:

Occupied 5% of time in port and 35% of time at sea.

Automatic:

Photo electric smoke detection system (P)

FIRST AID FIRE PROTECTION:

1 Hand portable monoammonium phosphate fire extinguisher

AUTOMATED FIRE PROTECTION SYSTEMS:

MANUAL FIRE FIGHTING EQUIPMENT:

Compartment: 1-178-4-QO SUPPLY OFFICE

Barr (Adjoining C	iers ompts ID and Name)	Mat ID	D∕H	Area- sq.ft.	Tbar	Dbar	%heat rel
1-162-2-LP 1-162-4-Q 1-178-6-QO 1-187-2-QO 1-198-2-QO 2-162-4-Q	PASSAGE SHIP STORE SUPPLY OFFICER OFFICE 1ST LT OFFICE SHIP OFFICE MACHINE SHOP	W2 W2 W2 W2 W2 F3	1 0 1 1 0	269.1 104.0 113.1 156.0 104.0	25 25 25 25 25 25	40 40 40 40 40 300	30 30 30 30 30
2-195-2-Q 01-178-2-W	FIREFIGHTING EQPT ROOM ROLL STABILIZATION TANK	F3 C3	0	24.0 124.2	25 10	300 100	5 5

3

Compartment: 1-178-6-QO SUPPLY OFFICER OFFICE

USE: QO Offices

AREA: 91 sq.ft. DECK HEIGHT: 13.0 ft. VOLUME: 1,188 cu.ft.

UNACCEPTABLE LOSS: Code 8 (All compartments of one type lost to fire)

THRESHOLD FREQUENCY OF UNACCEPTABLE LOSS: 1.0000 per ship year

FREQUENCY OF ESTABLISHED BURNING: 0.0004

FUEL LOAD: 20,000 BTUs/sq.ft.

UENTILATION: 169 cu ft/min EXCHANGE TIME: 7.0 min.

UENT AREA: 175 sq.in. UENT HEIGHT: 90 in.

FIRE STARTED DUE TO:	 	I	FRI Time	Α	M
Fire Origin	1	20	5	0	60
Tbar Failure	1	15	5	0	40
Dbar Failure	í	5	*	0	0

* calculated as (100 - % Heat Release)/100 X FRI Time or 2 min., whichever is greater.

DETECTION:

Manual:

Occupied 5% of time in port and 35% of time at sea.

Automatic:

Photo electric smoke detection system (P)

FIRST AID FIRE PROTECTION:

1 Hand portable monoammonium phosphate fire extinguisher

AUTOMATED FIRE PROTECTION SYSTEMS:

MANUAL FIRE FIGHTING EQUIPMENT:

Compartment:	1-178-6-QO	SUPPLY	OFFIC	ER OF	FICE			
Barr (Adjoining C	iers ompts ID and Name)		Mat ID	D/H	Area- sq.ft.	Tbar	Dbar	%heat rel
1-162-4-Q 1-178-4-Q0 1-187-2-Q0 2-162-4-Q	SHIP STORE SUPPLY OFFICE 1ST LT OFFICE MACHINE SHOP		W2 W2 W2 F3	0 1 0 0	136.5 113.1 136.5 87.0	25 25 25 25	40 40 40 300	30 30 30 5

Compartment: 1-187-2-QO 1ST LT OFFICE

USE: QO Offices

AREA: 126 sq.ft. DECK HEIGHT: 13.0 ft. VOLUME: 1,638 cu.ft.

UNACCEPTABLE LOSS: Code 8 (All compartments of one type lost to fire)

THRESHOLD FREQUENCY OF UNACCEPTABLE LOSS: 1.0000 per ship year

FREQUENCY OF ESTABLISHED BURNING: 0.0004

FUEL LOAD: 20,000 BTUs/sq.ft.

UENTILATION: 234 cu ft/min EXCHANGE TIME: 7.0 min.

UENT AREA: 175 sq.in. UENT HEIGHT: 98 in.

* calculated as (100 - % Heat Release)/100 X FRI Time or 2 min., whichever is greater.

DETECTION:

Manual:

Occupied 5% of time in port and 35% of time at sea.

Automatic:

Photo electric smoke detection system (P)

FIRST AID FIRE PROTECTION:

1 Hand portable monoammonium phosphate fire extinguisher

AUTOMATED FIRE PROTECTION SYSTEMS:

MANUAL FIRE FIGHTING EQUIPMENT:

Compartment: 1-187-2-QO 1ST LT OFFICE

				rel
1	156.0 136.5	25 25	40 40	30 30
0	136.5	25	40	30
0	29.9	25 25		5 5
(Ö	90.0	0 90.0 25	90.0 25 300

1

Compartment: 1-198-2-QO SHIP OFFICE

USE: QO Offices

AREA: 225 sq.ft. DECK HEIGHT: 13.0 ft. VOLUME: 2,931 cu.ft.

UNACCEPTABLE LOSS: Code 8 (All compartments of one type lost to fire)

THRESHOLD FREQUENCY OF UNACCEPTABLE LOSS: 1.0000 per ship year

FREQUENCY OF ESTABLISHED BURNING: 0.0004

FUEL LOAD: 20,000 BTUs/sq.ft.

UENTILATION: 488 cu ft/min EXCHANGE TIME: 6.0 min.

UENT AREA: 175 sq.in. UENT HEIGHT: 90 in.

* calculated as (100 ~ % Heat Release)/100 X FRI Time or 2 min., whichever is greater.

DETECTION:

Manual:

Occupied 5% of time in port and 35% of time at sea.

Automatic:

Photo electric smoke detection system (P)

FIRST AID FIRE PROTECTION:

1 Hand portable monoammonium phosphate fire extinguisher

AUTOMATED FIRE PROTECTION SYSTEMS:

MANUAL FIRE FIGHTING EQUIPMENT:

Compartment: 1-198-2-QO SHIP OFFICE

Barr (Adjoining C	iers ompts ID and Name)	Mat ID	D∕H	Area- sq.ft.	Tbar	Dbar	%heat rel
1-162-2-LP 1-178-4-QO 1-187-2-QO 1-206-2-QO 1-206-2-QO 1-207-2-LP 2-195-2-Q 01-178-2-W	PASSAGE SUPPLY OFFICE 1ST LT OFFICE EXO OFFICE EXO OFFICE PASSAGE FIREFIGHTING EQPT ROOM ROLL STABILIZATION TANK	W2 W2 W2 W2 W2 W2 F3 C3	1 0 0 0 1 0 0	111.8 104.0 136.5 136.5 156.0 135.2 221.2 114.0	25 25 25 25 25 25 25 10	40 40 40 40 40 40 300	30 30 30 30 30 30 5

Compartment: 1-199-1-L MEDICAL STORES

USE: L Living quarters/medical/dental areas

AREA: 110 sq.ft. DECK HEIGHT: 13.0 ft. VOLUME: 1,436 cu.ft.

UNACCEPTABLE LOSS: Code 3 (Full compartment lost to fire)

THRESHOLD FREQUENCY OF UNACCEPTABLE LOSS: 0.3300 per ship year

FREQUENCY OF ESTABLISHED BURNING: 0.0008

FUEL LOAD: 400,000 BTUs/sq.ft.

UENTILATION: 143 cu ft/min EXCHANGE TIME: 10.0 min.

UENT AREA: 175 sq.in. UENT HEIGHT: 90 in.

FIRE STARTED DUE TO: | I FRI A M Time

Fire Origin | 30 4 0 30
Thar Failure | 20 4 0 40
Dbar Failure | 10 * 0 0

* calculated as (100 - % Heat Release)/100 X FRI Time or 2 min., whichever is greater.

DETECTION:

Manual:

Occupied 5% of time in port and 10% of time at sea.

Automatic:

Rate of temperature rise detection system (RR) Photo electric smoke detection system (P)

AUTOMATED FIRE PROTECTION SYSTEMS:

MANUAL FIRE FIGHTING EQUIPMENT:

Compartment: 1-199-1-L MEDICAL STORES

Barri (Adjoining Co	iers ompts ID and Name)	Mat ID	D∕H	Area- sq.ft.	Tbar	Dbar	%heat rel
1-162-3-LP 1-174-1-L 1-199-3-L 1-207-1-A 1-207-3-A 1-207-5-A 2-195-1-A 01-178-3-W	PASSAGE MEDICAL TREATMENT & EXAMI X-RAY DARKROOM STOREROOM LIFE JACKET LOCKER BOAT GEAR LOCKER ELECTRICAL STOREROOM ROLL STABILIZATION TANK	W2 W2 W2 W2 W2 W2 F3 C3	1 0 1 0 0 0	110.5 169.0 110.5 72.8 70.2 26.0 110.5 51.0	25 25 25 25 25 25 25	40 40 40 40 40 40 300	30 30 30 30 30 30 5

Compartment: 1-199-3-L X-RAY DARKROOM

USE: Q Areas usually unoccupied: engineering, electronics, galleys

AREA: 46 sq.ft. DECK HEIGHT: 13.0 ft. UOLUME: 607 cq.ft.

UNACCEPTABLE LOSS: Code 3 (Full compartment lost to fire)
THRESHOLD FREQUENCY OF UNACCEPTABLE LOSS: 0.3300 per ship year

FREQUENCY OF ESTABLISHED BURNING: 0.0023

FUEL LOAD: 20,000 BTUs/sq.ft.

UENTILATION: 303 cu ft/min EXCHANGE TIME: 2.0 min.

UENT AREA: 175 sq.in. UENT HEIGHT: 90 in.

FIRE STARTED DUE TO: I FRI Time Fire Origin 1 20 4 0 20 1 15 Thar Failure 4 0 40 Dbar Failure 5 * ß ກ

* calculated as (100 - % Heat Release)/100 X FRI Time or 2 min., whichever is greater.

DETECTION:

Manual:

Occupied 5% of time in port and 10% of time at sea.

Automatic:

Rate of temperature rise detection system (RR) Photo electric smoke detection system (P)

AUTOMATED FIRE PROTECTION SYSTEMS:

MANUAL FIRE FIGHTING EQUIPMENT:

Compartment	1-199-3-L X-	RAY DA	RKRO	ОМ				
	iers Compts ID and Name)		Mat ID	D∕H	Area- sq.ft,	Tbar	Dbar	%heat rel
1-174-1-L 1-199-1-L 1-207-5-A	MEDICAL TREATMENT & MEDICAL STORES BOAT GEAR LOCKER	EXAMI	W2 W2 W2	0 1 0	71.5 110.5 21.5	25 25 25	40 40 40	30 30
2-195-1-A	ELECTRICAL STOREROOF	М	F3	0 1	42.5	25 25	300	30 5

Compartment: 1-206-2-QO EXO OFFICE

USE: QO Offices

AREA: 126 sq.ft. DECK HEIGHT: 13.0 ft. VOLUME: 1,638 cu.ft.

UNACCEPTABLE LOSS: Code 8 (All compartments of one type lost to fire)

THRESHOLD FREQUENCY OF UNACCEPTABLE LOSS: 1.0000 per ship year

FREQUENCY OF ESTABLISHED BURNING: 0.0004

FUEL LOAD: 20,000 BTUs/sq.ft.

UENTILATION: 234 cu ft/min EXCHANGE TIME: 7.0 min.

UENT AREA: 175 sq.in. UENT HEIGHT: 90 in.

FIRE STARTED DUE T	: 07	l I	I	FRI Time	A	М	
Fire Origin		1	20	5	0	60	
Tbar Failure		l l	15	5	0	40	
Dbar Failure		1	5	*	0	0	
	* calculated	85	(100	- % He	at	Release)/100	>

calculated as (100 - % Heat Release)/100 X FRI Time or 2 min., whichever is greater.

DETECTION:

Manual:

Occupied 5% of time in port and 35% of time at sea.

Automatic:

Photo electric smoke detection system (P)

FIRST AID FIRE PROTECTION:

1 Hand portable monoammonium phosphate fire extinguisher

AUTOMATED FIRE PROTECTION SYSTEMS:

MANUAL FIRE FIGHTING EQUIPMENT:

Compartment:	1-206-2-QO	EXO OFF	ICE					
Barr (Adjoining C	iers ompts ID and Name)		Mat ID	D∕H	Area- sq.ft.	Tbar	Dbar	%heat rel
1-198-2-Q0 1-198-2-Q0	SHIP OFFICE SHIP OFFICE		₩2 ₩2	0	136.5 156.0	25 25	4 0 4 0	30 30
2-195-2-Q	FIREFIGHTING EQP	T ROOM	F3	0	116.5	25	300	5
				1				

Compartment: 1-207-1-A STOREROOM

USE: AS Storerooms

AREA: 56 sq.ft. DECK HEIGHT: 13.0 ft. VOLUME: 728 cu.ft.

UNACCEPTABLE LOSS: Code 3 (Full compartment lost to fire)
THRESHOLD FREQUENCY OF UNACCEPTABLE LOSS: 0.1000 per ship year

FREQUENCY OF ESTABLISHED BURNING: 0.0009

FUEL LOAD: 32,000 BTUs/sq.ft.

UENTILATION: 242 cu ft/min EXCHANGE TIME: 3.0 min.

UENT AREA: 10 sq.in. UENT HEIGHT: 1 in.

FIRE	STARTE	D DUE	TO:	l i	I	FRI Time	A	М
· 1	Fire Or	igin		1	20) 4	0	30
	Tbar Fa			1	15	5 4	0	20
1	Dhar Fa	ilore		1	•	5 ★	G	Λ

* calculated as (100 - % Heat Release)/100 X FRI Time or 2 min., whichever is greater.

DETECTION:

Manual:

Occupied 5% of time in port and 15% of time at sea.

Automatic:

Rate of temperature rise detection system (RR) Photo electric smoke detection system (P)

AUTOMATED FIRE PROTECTION SYSTEMS:

MANUAL FIRE FIGHTING EQUIPMENT:

Compartment: 1-207-1-A STOREROOM

Barr (Adjoining C	iers ompts ID and Name)	Mat ID	D/H	Area- sq.ft.	Tbar	Dbar	%heat rel
1-162-3-LP 1-199-1-L 1-207-3-A	PASSAGE MEDICAL STORES LIFE JACKET LOCKER	₩2 ₩2 ₩2	1 0 0	84.5 72.8 130.0	25 25 25	40 40 40	30 30
1-213-3-L 2-195-1-A	Q.M. SHELTER ELECTRICAL STOREROOM	₩2 F3	0	45.5 11.2	25 25	40 300	30 5
2-205-1-Q 01-178-3-W	ELECTRIC SHOP ROLL STABILIZATION TANK	F3	0	44.8 56.0	25 10	300 100	5 5

Compartment: 1-207-2-LP PASSAGE

Zero strength barrier adjacent.

USE: LP Passageways

AREA: 185 sq.ft. DECK HEIGHT: 13.0 ft. VOLUME: 2,412 cu.ft.

UNACCEPTABLE LOSS: Code 8 (All compartments of one type lost to fire)

THRESHOLD FREQUENCY OF UNACCEPTABLE LOSS: 0.1000 per ship year

FREQUENCY OF ESTABLISHED BURNING: 0.0001

FUEL LOAD: 3,200 BTUs/sq.ft.

Paint, cable insulation laminate on blkhds-no dropped ceiling

UENTILATION: 482 cu ft/min EXCHANGE TIME: 5.0 min.

UENT AREA: 1000 sq.in. UENT HEIGHT: 12 in.

FIRE STARTED DUE TO:	1	I	FRI Time	A	М
Fire Origin	1	95	20	0	40
Tbar Failure	ı	80	20	0	60
Dbar Failure	1	40	*	0	0

* calculated as (100 - % Heat Release)/100 X FRI Time or 2 min., whichever is greater.

DETECTION:

Manual:

Occupied 30% of time in port and 50% of time at sea.

Automatic:

Photo electric smoke detection system (P)

AUTOMATED FIRE PROTECTION SYSTEMS:

MANUAL FIRE FIGHTING EQUIPMENT:

Compartment: 1-207-2-LP PASSAGE

Barri (Adjoining Co	ers mpts ID and Name)	Mat ID	D∕H	Area- sq.ft.		Dbar	%heat rel
1-162-2-LP 1-162-3-LP 1-178-2-E 1-198-2-QO 1-210-0-M 1-210-2-Q 1-210-2-Q 1-213-2-TS 1-213-2-TS 1-213-2-TS 1-213-2-TS 1-213-2-TS 1-213-2-LP 2-162-2-LP 2-162-2-LP 2-210-0-Q	PASSAGE PASSAGE BOILER ROOM UPPER LEVEL SHIP OFFICE SMALL ARMS STOW & REPAIR MAIL ROOM MAIL ROOM STAIRCASE STAIRCASE STAIRCASE C.G. LOCKER C.G. LOCKER PASSAGE PASSAGE GRAVIMETER ROOM	00000000000000000000000000000000000000	0 0 1 0 1 0 1 0 1 1 1 1	52.0 44.2 312.0 135.2 104.0 104.0 104.0 52.0 52.0 124.8 52.0 124.8 52.0 113.6 2.8 3.6	0 0 10 25 25 25	100 40 40 40 40 80 80 80	100 100 100 30 30 30 30 30 5 5 5 5 5
2-210-01-Q 2-210-2-TS 01-178-0-W 01-178-2-W 01-218-6-LP	COMPUTER/NAV LAB STAIRCASE ROLL STAB TANK CROSS DUCK ROLL STABILIZATION TANK PASSAGE	F3	0 0 0 0	3.6 65.6 97.2 67.2 21.2	25 25 10 10	300 300 100 100	5 5 5 5

Compartment: 1-207-3-A LIFE JACKET LOCKER

_

USE: AG Small Storage Spaces -- Gear Lockers

AREA: 54 sq.ft. DECK HEIGHT: 13.0 ft. VOLUME: 702 cq.ft.

UNACCEPTABLE LOSS: Code 4 (2 compartments of one type lost to fire) THRESHOLD FREQUENCY OF UNACCEPTABLE LOSS: 1.0000 per ship year

FREQUENCY OF ESTABLISHED BURNING: 0.0009

FUEL LOAD: 120,000 BTUs/sq.ft.

UENTILATION: 70 cu ft/min EXCHANGE TIME: 10.0 min.

UENT AREA: 10 sq.in. UENT HEIGHT: 1 in.

FIRE STARTED DUE TO: I FRI A Time 1 10 3 0 40 Fire Origin Thar Failure 5 3 0 30 Dbar Failure 0 * 0 0

* calculated as (100 - % Heat Release)/100 X FRI Time or 2 min., whichever is greater.

DETECTION:

Manual:

Occupied 5% of time in port and 10% of time at sea. Automatic:

AUTOMATED FIRE PROTECTION SYSTEMS:

MANUAL FIRE FIGHTING EQUIPMENT:

Compartment: 1-207-3-A LIFE JACKET LOCKER

Barr (Adjoining C	iers ompts ID and Name)	Mat ID	D/H	Area- sq.ft.	Tbar	Dbar	%heat rel
1-199-1-L 1-207-1-A	MEDICAL STORES	พ2 พ2	0 0	70.2 130.0	25 25	40 40	30 30
1-207-1-A 1-207-5-A 2-195-1-A	BOAT GEAR LOCKER ELECTRICAL STOREROOM	W2 W2 F3	0	130.0 130.0	25 25	40 300	30 5
2-205-1-Q 01-178-3-W	ELECTRIC SHOP ROLL STABILIZATION TANK	F3 C3	0	43.2	25 10	300 100	5 5

Compartment: 1-207-5-A BOAT GEAR LOCKER

USE: AG Small Storage Spaces -- Gear Lockers

AREA: 75 sq.ft. DECK HEIGHT: 13.0 ft. VOLUME: 975 cu.ft.

UNACCEPTABLE LOSS: Code 3 (Full compartment lost to fire)

THRESHOLD FREQUENCY OF UNACCEPTABLE LOSS: 1.0000 per ship year

FREQUENCY OF ESTABLISHED BURNING: 0.0009

FUEL LOAD: 120,000 BTUs/sq.ft.

UENTILATION: 97 cu ft/min EXCHANGE TIME: 10.0 min.

UENT AREA: 10 sq.in. UENT HEIGHT: 1 in.

* calculated as (100 - % Heat Release)/100 \times FRI Time or 2 min., whichever is greater.

DETECTION:

Manual:

Occupied 5% of time in port and 10% of time at sea.

Automatic:

Rate of temperature rise detection system (RR) Photo electric smoke detection system (P)

AUTOMATED FIRE PROTECTION SYSTEMS:

MANUAL FIRE FIGHTING EQUIPMENT:

Compartment:	1-207-5-A	BOAT	GEAR	LOCKER	

	iers compts ID and Name)	Mat ID	D∕H	Area- sq.ft.	Thar	Dbar	%heat rel
1-199-1-L 1-199-3-L 1-207-3-A 2-195-1-A 2-205-1-Q	MEDICAL STORES X-RAY DARKROOM LIFE JACKET LOCKER ELECTRICAL STOREROOM ELECTRIC SHOP	W2 W2 W2 F3 F3	0 0 0 0	26.0 71.5 130.0 14.0 54.8	25 25 25 25 25	40 40 40 300 300	30 30 30 5 5

Compartment: 1-210-0-M SMALL ARMS STOW & REPAIR

Ammunition (stowages and handling)

AREA: 157 sq.ft. DECK HEIGHT: 13.0 ft. VOLUME: 2,046 cu.ft.

UNACCEPTABLE LOSS: Code 3 (Full compartment lost to fire)

THRESHOLD FREQUENCY OF UNACCEPTABLE LOSS: 0.3300 per ship year

FREQUENCY OF ESTABLISHED BURNING: 0.0001

FUEL LOAD: 3,200,000 BTUs/sq.ft.

511 cu ft/min EXCHANGE TIME: UENTILATION: 4.0 min.

UENT AREA: 10 sg.in. UENT HEIGHT: 1 in.

FIRE	STARTED	DUE	TO:	l 1	I	FRI Time	A	М
-]	Fire Orio	gin			 5	3	90	0
	Tbar Fail			· ·	25	3	40	0
1	Dbar Fai	lure		1	0	*	0	0

* calculated as (100 - % Heat Release)/100 X FRI Time or 2 min., whichever is greater.

DETECTION:

Manual:

Occupied 25% of time in port and 15% of time at sea.

Automatic:

Fixed temperature detection system (FT) Ionization smoke detection system (I) Photo electric smoke detection system (P) Flame detection system (UU or IR) (F)

AUTOMATED FIRE PROTECTION SYSTEMS:

MANUAL FIRE FIGHTING EQUIPMENT:

Compartment: 1-210-0-M SMALL ARMS STOW & REPAIR

Barri (Adjoining Co	ers mpts ID and Name)	Mat ID	D/H	Area- sq.ft.	Tbar	Dbar	%heat rel
1-162-3-LP 1-207-2-LP 1-210-1-Q 1-210-2-Q 1-218-2-A 1 223-0-C 2-210-0-Q 2-210-01-Q 01-178-0-W 01-218-1-LW 01-218-2-LW	PASSAGE PASSAGE BARBER SHOP MAIL ROOM C.G. LOCKER AFT REPAIR NO.3 & DAMAGE GRAVIMETER ROOM COMPUTER/NAV LAB ROLL STAB TANK CROSS DUCK WC & SHR WC & SHR	W2 W2 W2 W2 W6 F3 F3 C3	0 1 0 0 0 0 0 0	58.5 104.0 163.8 104.0 59.8 162.5 87.4 70.1 91.2 23.8 42.4	25 25 25 25 25 10 25 25 10	40 40 40 40 100 300 300 100 100	30 30 30 30 30 5 5 5 5

Compartment: 1-210-1-Q BARBER SHOP

USE: QO Offices

AREA: 107 sq.ft. DECK HEIGHT: 13.0 ft. VOLUME: 1,393 cu.ft.

UNACCEPTABLE LOSS: Code 8 (All compartments of one type lost to fire)

THRESHOLD FREQUENCY OF UNACCEPTABLE LOSS: 1.0000 per ship year

FREQUENCY OF ESTABLISHED BURNING: 0.0004

FUEL LOAD: 20,000 BTUs/sq.ft.

UENTILATION: 348 cu ft/min EXCHANGE TIME: 4.0 min.

UENT AREA: 175 sq.in. UENT HEIGHT: 90 in.

FIRE STARTED DUE TO: | I FRI A M | Time | | 20 5 0 60 | Thar Failure | 15 5 0 40 | Dhar Failure | 1 5 * 0 0

* calculated as (100 - % Heat Release)/100 X FRI Time or 2 min., whichever is greater.

DETECTION:

Manual:

Occupied 5% of time in port and 35% of time at sea.

Automatic:

Photo electric smoke detection system (P)

AUTOMATED FIRE PROTECTION SYSTEMS:

MANUAL FIRE FIGHTING EQUIPMENT:

Compartment: 1-210-1-Q BARBER SHOP

Barri (Adjoining Co	ers mpts ID and Name)	Mat ID	D/H	Area- sq.ft.	Tbar	Dbar	%heat rel
1-162-3-LP 1-210-0-M	PASSAGE SMALL ARMS STOW & REPAIR	ա2 ພ2	1 0	110.5 163.8	25 25	40 40	30 30
1-210-3-A 1-213-1-LW	GEAR LOCKER	₩2 ₩3	0 0	39.0 124.8	25 25	40 60	30 25
1-223-0-C 2-210-0-Q	AFT REPAIR NO.3 & DAMAGE GRAVIMETER ROOM	W6 F3	0	110.5	10 25	100	5 5
2-210-01-Q 01-178-0-W	COMPUTER/NAU LAB ROLL STAB TANK CROSS DUCK	F3	0	88.1 62.1	25 10	300 100	5 5
01-218-1-LW	WC & SHR	C3	0	18.6	10	100	5
01-218-3-A	GEAR LOCKER	С3	0 	26 . 5	10	100	5

Compartment: 1-210-2-Q MAIL ROOM

USE: QO Offices

AREA: 64 sq.ft. DECK HEIGHT: 13.0 ft. VOLUME: 832 cq.ft.

UNACCEPTABLE LOSS: Code 8 (All compartments of one type lost to fire)

THRESHOLD FREQUENCY OF UNACCEPTABLE LOSS: 1.0000 per ship year

FREQUENCY OF ESTABLISHED BURNING: 0.0004

FUEL LOAD: 20,000 BTUs/sq.ft.

UENTILATION: 118 cu ft/min EXCHANGE TIME: 7.0 min.

UENT AREA: 175 sq.in. UENT HEIGHT: 90 in.

* calculated as (100 - % Heat Release)/100 X FRI Time or 2 min., whichever is greater.

DETECTION:

Manual:

Occupied 5% of time in port and 35% of time at sea.

Automatic:

Photo electric smoke detection system (P)

AUTOMATED FIRE PROTECTION SYSTEMS:

MANUAL FIRE FIGHTING EQUIPMENT:

Compartment: 1-210-2-Q MAIL ROOM

Barr (Adjoining C	iers ompts ID and Name)	Mat ID	D∕H	Area- sq.ft.	Tbar	Dbar	%heat rel
1-207-2-LP 1-207-2-LP 1-210-0-M 1-218-2-A	PASSAGE PASSAGE SMALL ARMS STOW & REPAIR C.G. LOCKER	พ2 พ2 พ2 พ2	0 1 0	104.0 104.0 104.0 104.0	25 25 25 25	40 40 40 40	30 30 30 30
2-210-01-Q 01-178-0-W 01-218-4-A	COMPUTER/NAU LAB ROLL STAB TANK CROSS DUCK GEAR LOCKER	F3	0 0 0	64.0 58.4 5.6	25 10 10	300 100 100	5 5 5

Compartment: 1-210-3-A GEAR LOCKER

USE: AG Small Storage Spaces -- Gear Lockers

AREA: 9 sq.ft. DECK HEIGHT: 13.0 ft. VOLUME: 117 cu.ft.

UNACCEPTABLE LOSS: Code 4 (2 compartments of one type lost to fire) THRESHOLD FREQUENCY OF UNACCEPTABLE LOSS: 1.0000 per ship year

FREQUENCY OF ESTABLISHED BURNING: 0.0009

FUEL LOAD: 1,080,000 BTUs/sq.ft.

Fuel load in psf = 15 x height of deck.

UENTILATION: 11 cu ft/min EXCHANGE TIME: 10.0 min.

UENT AREA: 10 sq.in. UENT HEIGHT: 1 in.

* calculated as (100 - % Heat Release)/100 X FRI Time or 2 min., whichever is greater.

DETECTION:

Manual:

Occupied 5% of time in port and 10% of time at sea. Automatic:

AUTOMATED FIRE PROTECTION SYSTEMS:

MANUAL FIRE FIGHTING EQUIPMENT:

Compartment: 1-210-3-A GEAR LOCKER

Barr (Adjoining C	iers ompts ID and Name)	Mat ID	D/H	Area- sq.ft.	Tbar	Dbar	%heat rel
1-162-3-LP 1-162-3-LP 1-210-1-Q 1-213-1-LW 2-210-01-Q 01-178-0-W	PASSAGE PASSAGE BARBER SHOP WC & WR COMPUTER/NAU LAB ROLL STAB TANK CROSS DUCK	W2 W2 W2 W3 F3 C3	0 1 0 0 0	39.0 39.0 39.0 39.0 9.0	25 25 25 25 25 10	40 40 40 60 300 100	30 30 30 25 5

Compartment: 1-213-1-LW WC & WR

USE: LW Wash room, water closet and shower areas

28 sq.ft. DECK HEIGHT: 13.0 ft. VOLUME: 374 cu.ft.

UNACCEPTABLE LOSS: Code 8 (All compartments of one type lost to fire)

THRESHOLD FREQUENCY OF UNACCEPTABLE LOSS: 0.1000 per ship year

FREQUENCY OF ESTABLISHED BURNING: 0.0002

0 BTUs/sq.ft. FUEL LOAD:

UENTILATION: 93 cu ft/min EXCHANGE TIME: 4.0 min.

UENT AREA: 175 sq.in. VENT HEIGHT: 90 in.

FIRE STARTED DUE TO: FRI 1 Time Fire Origin I 100 999 0 30 Tbar Failure 1 100 999 0 40 Dbar Failure 35 * O 8 1

* calculated as (100 - % Heat Release)/100 X FRI Time or 2 min., whichever is greater.

DETECTION:

Manual:

Occupied 5% of time in port and 15% of time at sea. Automatic:

AUTOMATED FIRE PROTECTION SYSTEMS:

MANUAL FIRE FIGHTING EQUIPMENT:

Compartment: 1-213-1-LW WC & WR

Barr (Adjoining C	iers ompts ID and Name)	Mat ID	D∕H	Area- sq.ft.	Tbar	Dbar	%heat rel
1-162-3-LP	PASSAGE	Ш3	1	124.8	25	60	25
1-210-1-Q	BARBER SHOP	M3	Ô	124.8	25 25	60	25 25
1-210-3-A	GEAR LOCKER	M3	Ŏ	39.0	25	60	25
1-223-0-C	AFT REPAIR NO.3 & DAMAGE	W6	Ō	39.0	10	100	5
2-210-01-Q	COMPUTER/NAU LAB	F3	0	28.8	25	300	5
01-178-0-W	ROLL STAB TANK CROSS DUCK	C3	0	12.9	10	100	5
01-218-3-A	GEAR LOCKER	C3	0	15.9	10	100	5

Compartment: 1-213-2-TS STAIRCASE

USE: TS Staircases

AREA: 38 sq.ft. DECK HEIGHT: 13.0 ft. VOLUME: 499 cu.ft.

UNACCEPTABLE LOSS: Code 8 (All compartments of one type lost to fire)

THRESHOLD FREQUENCY OF UNACCEPTABLE LOSS: 0.1000 per ship year

FREQUENCY OF ESTABLISHED BURNING: 0.0001

FUEL LOAD: 800 BTUs/sq.ft.
Paint-no carpet or laminate

UENTILATION: 99 cu ft/min EXCHANGE TIME: 5.0 min.

UENT AREA: 10 sq.in. UENT HEIGHT: 1 in.

FIRE STARTE	D DUE TO):	1	I	FRI Time	A	М
Fire Or	iqin		· 	100	999	0	30
Tbar Fa	ilure		ı	100	999	0	40
Dbar Fa	ilure		1	90	*	0	0
		* calculated	85	(100	- % He	at	Release)/

* calculated as (100 - % Heat Release)/100 X FRI Time or 2 min., whichever is greater.

DETECTION:

Manual:

Occupied 30% of time in port and 50% of time at sea. Automatic:

AUTOMATED FIRE PROTECTION SYSTEMS:

MANUAL FIRE FIGHTING EQUIPMENT:

Compartment: 1-213-2-TS STAIRCASE

Barr (Adjoining C	iers ompts ID and Name)	Mat ID	D/H	Area- sq.ft.	Tbar	Dbar	%heat rel
1-207-2-LP 1-207-2-LP 1-207-2-LP 1-217-2-A 1-223-4-A 2-210-2-TS 01-178-2-W 01-218-8-A	PASSAGE PASSAGE PASSAGE C.G. LOCKER LIFE JACKET LOCKER STAIRCASE ROLL STABILIZATION TANK SCIENCE BAGGAGE ROOM	พร พร พร พร พธ พธ ศร เ	0 0 1 0 0 1 0	52.0 52.0 124.8 72.8 52.0 38.4 17.2 21.2	5 5 5 10 25 10	80 80 80 100 300 100	5 5 5 5 5 5 5 5 5 5 5 5

Compartment: 1-213-3-L Q.M. SHELTER

USE: L Living quarters/medical/dental areas

21 sq.ft. DECK HEIGHT: 13.0 ft. VOLUME: 273 cu.ft.

UNACCEPTABLE LOSS: Code 8 (All compartments of one type lost to fire) THRESHOLD FREQUENCY OF UNACCEPTABLE LOSS: 1.0000 per ship year

FREQUENCY OF ESTABLISHED BURNING: 0.0008

FUEL LOAD: 20,000 BTUs/sq.ft.

45 cu ft/min EXCHANGE TIME: UENTILATION: 6.0 min.

UENT HEIGHT: 10 in. VENT AREA: 100 sq.in.

FRI A FIRE STARTED DUE TO: I - (Time Fire Origin 1 20 0 0 ı 15 Thar Failure G Dbar Failure 5 0 0 * calculated as (100 - % Heat Release)/100 X

FRI Time or 2 min., whichever is greater.

DETECTION:

Manual:

Occupied 50% of time in port and 0% of time at sea. Automatic:

AUTOMATED FIRE PROTECTION SYSTEMS:

MANUAL FIRE FIGHTING EQUIPMENT:

Compartment: 1-213-3-L Q.M. SHELTER

Barr (Adjoining C	iers ompts ID and Name)	Mat ID	D/H	Area- sq.ft.	Tbar	Dbar	%heat rel
1-162-3-LP 1-162-3-LP	PASSAGE PASSAGE	W 2 W2	0	45.5 78.0	25 25	40	30 30
1-207-1-A	STOREROOM	W2 F3	0	45.5 14.0	25 25	40 300	30 5
2-162-3-LP 2-210-01-Q	Passage Computer/Nav Lab	F3	0	7.0	25 25		5
01-178-3-W	ROLL STABILIZATION TANK	C3	0	21.0	10	100	5
			0				

Compartment: 1-217-2-A C.G. LOCKER

.

USE: AG Small Storage Spaces -- Gear Lockers

AREA: 22 sq.ft. DECK HEIGHT: 13.0 ft. UOLUME: 291 cu.ft.

UNACCEPTABLE LOSS: Code 8 (All compartments of one type lost to fire) THRESHOLD FREQUENCY OF UNACCEPTABLE LOSS: 1.0000 per ship year

FREQUENCY OF ESTABLISHED BURNING: 0.0009

FUEL LOAD: 80,000 BTUs/sq.ft.

UENTILATION: 29 cu ft/min EXCHANGE TIME: 10.0 min.

UENT AREA: 10 sq.in. UENT HEIGHT: 1 in.

* calculated as (100 - % Heat Release)/100 X FRI Time or 2 min., whichever is greater.

DETECTION:

Manual:

Occupied 5% of time in port and 10% of time at sea.

Automatic:

Rate of temperature rise detection system (RR) Photo electric smoke detection system (P)

AUTOMATED FIRE PROTECTION SYSTEMS:

MANUAL FIRE FIGHTING EQUIPMENT:

Compartment: 1-217-2-A C.G. LOCKER

Barr (Adjoining C	iers ompts ID and Name)	Mat ID	D/H	Area- sq.ft.	Tbar	Dbar	%heat rel
1-207-2-LP 1-213-2-TS 1-223-6-L 2-162-2-LP 01-178-2-W 01-218-8-A	PASSAGE STAIRCASE Q.M. SHELTER PASSAGE ROLL STABILIZATION TANK SCIENCE BAGGAGE ROOM	W2 W5 W6 F3 C3	1 0 0 0	52.0 72.8 52.0 22.4 1.2 21.2	25 5 10 25 10	40 80 100 300 100	30 5 5 5 5

Compartment: 1-218-2-A C.G. LOCKER

USE: AG Small Storage Spaces -- Gear Lockers

AREA: 36 sq.ft. DECK HEIGHT: 13.0 ft. VOLUME: 478 cu.ft.

UNACCEPTABLE LOSS: Code 8 (All compartments of one type lost to fire) THRESHOLD FREQUENCY OF UNACCEPTABLE LOSS: 1.0000 per ship year

FREQUENCY OF ESTABLISHED BURNING: 0.0009

FUEL LOAD: 80,000 BTUs/sq.ft.

UENTILATION: 47 cu ft/min EXCHANGE TIME: 10.0 min.

UENT AREA: 10 sq.in. UENT HEIGHT: 1 in.

* calculated as (100 - % Heat Release)/100 X FRI Time or 2 min., whichever is greater.

DETECTION:

Manual:

Occupied 5% of time in port and 10% of time at sea.

Automatic:

Rate of temperature rise detection system (RR)

Photo electric smoke detection system (P)

AUTOMATED FIRE PROTECTION SYSTEMS:

MANUAL FIRE FIGHTING EQUIPMENT:

Compartment: 1-218-2-A C.G. LOCKER

Barri (Adjoining Co	iers ompts ID and Name)	Mat ID	D∕H	Area- sq.ft.	Tbar	Dbar	%heat rel
1-207-2-LP 1-210-0-M	PASSAGE SMALL ARMS STOW & REPAIR	ω2 ω2	1 0	59.8 59.8	25 25	40 40	30 30
1-210-0-M 1-210-2-Q 1-223-0-C	MAIL ROOM AFT REPAIR NO.3 & DAMAGE	₩2 ₩2	0	104.0 104.0	25 25 10	40 100	30 30 5
2-210-01-Q 01-218-2-LW 01-218-4-A	COMPUTER/NAU LAB WC & SHR GEAR LOCKER	F3 C3 C3	0	36.8 5.2 31.6	25 10 10	300 100 100	5 5 5
01-710-3-H	GER LOOKER	U3		31.6	10	100	J

Compartment: 1-223-0-C AFT REPAIR NO.3 & DAMAGE CONTROL WORKSHO

USE: C Ship and fire control operating areas normally occupied.

AREA: 608 sq.ft. DECK HEIGHT: 13.0 ft. VOLUME: 7,904 cu.ft.

UNACCEPTABLE LOSS: Code 4 (2 compartments of one type lost to fire) THRESHOLD FREQUENCY OF UNACCEPTABLE LOSS: 1.0000 per ship year

FREQUENCY OF ESTABLISHED BURNING: 0.0012

FUEL LOAD: 32,000 BTUs/sq.ft.

UENTILATION: 1,580 cu ft/min EXCHANGE TIME: UENT AREA: 175 sq.in. UENT HEIGHT: 90 in. 5.0 min.

FIRE STARTED DUE TO:	1	I	FRI Time	A	М
Fire Origin	 I	20	6	0	80
Thar Failure	l l	15	6	0	70
Dbar Failure	1	5	*	0	0

* calculated as (100 - % Heat Release)/100 X FRI Time or 2 min., whichever is greater.

DETECTION:

Manual:

Occupied 25% of time in port and 50% of time at sea.

Rate of temperature rise detection system (RR) Photo electric smoke detection system (P)

FIRST AID FIRE PROTECTION:

- 2 Hand portable monoammonium phosphate fire extinguisher
- 1 Hand portable carbon dioxide fire extinguisher

AUTOMATED FIRE PROTECTION SYSTEMS:

MANUAL FIRE FIGHTING EQUIPMENT:

Compartment: 1-223-0-C AFT REPAIR NO.3 & DAMAGE CONTROL WORKSHO

Barri (Adjoining Co	ers mpts ID and Name)	Mat ID	D∕H	Area- sq.ft.	Tbar	Dbar	%heat rel
1-162-3-LP	PASSAGE	W6	1	78 . 0	10	100	5
1-210-0-M	SMALL ARMS STOW & REPAIR	₩6	0	162.5	10	100	5
1-210-1-Q	BARBER SHOP	W6	0	110.5	10	100	5
1-213-1-LW	WC & WR	₩ 6	0	39.0	10	100	5
1-218-2-A	C.G. LOCKER	W6	0	104.0	10	100	5
1-223-2-LP	PASSAGE	W2	1	208.0	25	40	30
1-239-0-Q	DRY LAB	W2	0	416.0	25	40	30
1-239-1-LP	PASSAGE	W2	1	78 .0	25	40	30
2-223-0-C	ENGINEERING CONTROL CENTE	F3	0	608.0	25	300	5
01-218-5-LP	PASSAGE	C3	0	96.0	10	100	5
01-218-6-LP	PASSAGE	C3	0	52.9	10	100	5
01-222-0-LW	WC & SHR	C3	0	27.0	10	100	5
01-222-1-L	SCIENTIST SR	C3	0	184.1	10	100	5
01-222-2-L	SCIENTIST SR	C3	Ď	131.1	10	100	5
01-225-0-L	SCIENTIST SR	C3	Ö	116.9	10	100	5

Compartment: 1-223-2-LP PASSAGE

USE: LP Passageways

AREA: 384 sq.ft. DECK HEIGHT: 13.0 ft. VOLUME: 4,992 cu.ft.

UNACCEPTABLE LOSS: Code 8 (All compartments of one type lost to fire)

THRESHOLD FREQUENCY OF UNACCEPTABLE LOSS: 0.1000 per ship year

FREQUENCY OF ESTABLISHED BURNING: 0.0001

FUEL LOAD: 3,200 BTUs/sq.ft.

Paint, cable insulation laminate on blkhds-no dropped ceiling

UENTILATION: 998 cu ft/min EXCHANGE TIME: 5.0 min. UENT AREA: 1750 sq.in. UENT HEIGHT: 12 in.

FIRE STARTED DUE TO: 1 FRI A Ī j Time 1 95 20 0 40 Fire Origin 20 Tbar Failure 1 80 0 60 Dbar Failure 40 0 0

* calculated as (100 - % Heat Release)/100 X FRI Time or 2 min., whichever is greater.

DETECTION:

Manual:

Occupied 30% of time in port and 50% of time at sea.

Automatic:

Photo electric smoke detection system (P)

FIRST AID FIRE PROTECTION:

1 Hand portable monoammonium phosphate fire extinguisher

AUTOMATED FIRE PROTECTION SYSTEMS:

MANUAL FIRE FIGHTING EQUIPMENT:

Compartment: 1-223-2-LP PASSAGE

Barri (Adjoining Co	ers ompts ID and Name)	Mat ID	D/H	Area- sq.ft.	Tbar	Dbar	%heat rel
1 207 0 17	DOCCOCE	ric.	4	5 0 0	10	100	
1-207-2-LP	PASSAGE	₩6 ₩2	1 1	52.0 208.0	10	100	5 30
1-223-0-C	AFT REPAIR NO.3 & DAMAGE	wz W2	0	130.0	25 25	40	30 30
1-223-4-A 1-233-2-A	LIFE JACKET LOCKER BOAT GEAR LOCKER	₩2 ₩2	O O	78.0	25 25	40 40	30 30
1-233-2-H 1-239-0-Q	DRY LAB	w∠ W2	1	208.0	25	40	30 30
1-239-0-Q 1-239-2-A	PHOTO LAB	w2 W2			25 25		
1-255-0-Q		w∠ W2	1	208.0		40	30
1-255-0-Q 1-255-2-TS	ELECTRONICS LAB	w2 W5	1	208.0 208.0	25 5	40 80	30
	STAIRCASE WET LAB	ພວ ພ2	1	208.0	25	40	5 30
1-271-0-0			_			40	
1-271-2-0	RECOMPRESSION AREA & DIVE		0	96.2	25		30
1-271-2-0	RECOMPRESSION AREA & DIVE		2	182.0	25	40	30
1-278-2-TS		W5	1	130.0	5	80	5
1-287-2-Q	WET LAB NO.2	W2	1	416.0	25	40	30
1-302-2-LW	WTR WC & SHR	W3	0	65.0	25	60	25
1-307-2-A	ARCTIC GEAR LOCKERSCIEN		1	150.8	25	40	30
1-319-0-LP	PASSAGE	W2	1	52.0	25	40	30
2-223-0-C	ENGINEERING CONTROL CENTE		0	120.6	25	300	5
2-251-2-A	BATTERY ROOM	F3	0	15.0	25	300	5
2-256-2-TS	STAIRCASE	F3	0	45 . 3	25	300	5
2-262-2-QF	FAN ROOM	F3	0	11.1	25	300	5
2-271-4-LP	PASSAGE	F3	0	160.0	25	300	5
2-311-0-Q	WINCH ROOM	F3	0	32.0	25	300	5
01-218-6-LP		C3	0	64.0	10	100	5
01-239-6-LP	PASSAGE	C3	0	64.0	10	100	5
01-255-6-LP		C3	0	145.6	10	100	5
01-292-2-LP	PASSAGE	C3	0	110.4	10	100	5

Compartment: 1-223-4-A LIFE JACKET LOCKER

USE: AG Small Storage Spaces -- Gear Lockers

AREA: 64 sq.ft. DECK HEIGHT: 13.0 ft. VOLUME: 832 cu.ft.

UNACCEPTABLE LOSS: Code 3 (Full compartment lost to fire)
THRESHOLD FREQUENCY OF UNACCEPTABLE LOSS: 1.0000 per ship year

FREQUENCY OF ESTABLISHED BURNING: 0.0009

FUEL LOAD: 120,000 BTUs/sq.ft.

UENTILATION: 83 cu ft/min EXCHANGE TIME: 10.0 min.

UENT AREA: 10 sq.in. UENT HEIGHT: 1 in.

FIRE STARTED DUE TO:	 	I	FRI Time	A 	М	
Fire Origin		10	3	0	40	
Tbar Failure	į	5	3	0	30	
Dbar Failure	ſ	0	*	0	0	

* calculated as (100 - % Heat Release)/100 X FRI Time or 2 min., whichever is greater.

DETECTION:

Manual:

Occupied 5% of time in port and 10% of time at sea.

Automatic:

Rate of temperature rise detection system (RR)

Photo electric smoke detection system (P)

AUTOMATED FIRE PROTECTION SYSTEMS:

MANUAL FIRE FIGHTING EQUIPMENT:

Compartment: 1-223-4-A LIFE JACKET LOCKER

	iers compts ID and Name)	Mat ID	D/H	Area- sq.ft,	Tbar	Dbar	%heat rel
1-213-2-TS	STAIRCASE	W6	0	52.0	10	100	5
1-223-2-LP 1-223-6-L	PASSAGE Q.M. SHELTER	ພ2 ພ2	0	130.0 52.0	25 25	40 40	30 30
1-223-6-L 1-233-2-A	Q.M. SHELTER BOAT GEAR LOCKER ENGINEERING CONTROL CENTE	₩2 ₩2	0	52.0 104.0	25 25	40 40	30 30
2-223-0-C 2-223-2-LP 01-218-8-A	ENGINEERING CONTROL CENTE PASSAGE SCIENCE BAGGAGE ROOM	F3 C3	០ ០ ព	40.0 24.0 64.0	25 25 10	300 300 100	5 5 5

Compartment: 1-223-6-L Q.M. SHELTER

USE: L Living quarters/medical/dental areas

AREA: 16 sq.ft. DECK HEIGHT: 13.0 ft. VOLUME: 208 cu.ft.

UNACCEPTABLE LOSS: Code 8 (All compartments of one type lost to fire)

THRESHOLD FREQUENCY OF UNACCEPTABLE LOSS: 1.0000 per ship year

FREQUENCY OF ESTABLISHED BURNING: 0.0008

FUEL LOAD: 20,000 BTUs/sq.ft.

UENTILATION: 34 cu ft/min EXCHANGE TIME: 6.0 min.

UENT AREA: 100 sq.in. UENT HEIGHT: 10 in.

* calculated as (100 - % Heat Release)/100 \times FRI Time or 2 min., whichever is greater.

DETECTION:

Manual:

Occupied 50% of time in port and 0% of time at sea.

Automatic:

AUTOMATED FIRE PROTECTION SYSTEMS:

MANUAL FIRE FIGHTING EQUIPMENT:

Compartment: 1-223-6-L Q.M. SHELTER

Barr (Adjoining C	iers ompts ID and Name)	Mat ID	D∕H	Area- sq.ft.	Tbar	Dbar	%heat rel
1-217-2-A 1-223-4-A 1-223-4-A 2-223-2-LP 01-218-8-A	C.G. LOCKER LIFE JACKET LOCKER LIFE JACKET LOCKER PASSAGE SCIENCE BAGGAGE ROOM	W6 W2 W2 F3 C3	0 0 0 0	52.0 52.0 52.0 16.0 16.0	10 25 25 25 10	100 40 40 300 100	5 30 30 5 5
			0				

COMPARTMENT FIRE SAFETY SUMMARY FOR POLAR ICEBREAKER REPLACEMENT

(drawings dated 5/12/1987)

Compartment: 1-233-2-A BOAT GEAR LOCKER

USE: AG Small Storage Spaces -- Gear Lockers

AREA: 48 sq.ft. DECK HEIGHT: 13.0 ft. VOLUME: 624 cu.ft.

UNACCEPTABLE LOSS: Code 4 (2 compartments of one type lost to fire) THRESHOLD FREQUENCY OF UNACCEPTABLE LOSS: 0.3300 per ship year

FREQUENCY OF ESTABLISHED BURNING: 0.0009

FUEL LOAD: 2,080,000 BTUs/sq.ft.

Boxes of flammable stores -- Fuel load in psf = 20 x height of deck

VENTILATION: 62 cu ft/min EXCHANGE TIME: 10.0 min.

UENT AREA: 10 sg.in. UENT HEIGHT: 1 in.

FIRE STARTED DUE TO: 1 I FRI А Time 30 Fire Origin 3 0 40 Thar Failure 20 3 0 30 1 Dbar Failure 10 * 0 8

* calculated as (100 - % Heat Release)/100 X FRI Time or 2 min., whichever is greater.

DETECTION:

Manual:

Occupied 5% of time in port and 5% of time at sea.

Automatic:

Rate of temperature rise detection system (RR) Photo electric smoke detection system (P)

AUTOMATED FIRE PROTECTION SYSTEMS:

MANUAL FIRE FIGHTING EQUIPMENT:

Compartment: 1-233-2-A BOAT GEAR LOCKER

Barr (Adjoining C	iers ompts ID and Name)	Mat ID	D/H	Area- sq.ft.	Tbar	Dbar	%heat rel
1-223-2-LP 1-223-4-A 1-239-2-A 2-223-0-C 2-223-2-LP 01-218-8-A	PASSAGE LIFE JACKET LOCKER PHOTO LAB ENGINEERING CONTROL CENTE PASSAGE SCIENCE BAGGAGE ROOM	W2 W2 W2 F3 F3 C3	0 0 0 0 0	78.0 104.0 104.0 24.0 24.0 48.0	25 25 25 25 25 25	40 40 40 300 300	30 30 30 5 5

Compartment: 1-239-0-Q DRY LAB

USE: QS Scientific Spaces

AREA: 488 sq.ft. DECK HEIGHT: 13.0 ft. VOLUME: 6,344 cu.ft.

UNACCEPTABLE LOSS: Code 3 (Full compartment lost to fire)

THRESHOLD FREQUENCY OF UNACCEPTABLE LOSS: 0.1000 per ship year

FREQUENCY OF ESTABLISHED BURNING: 0.0023

FUEL LOAD: 32,000 BTUs/sq.ft.

UENTILATION: 1,586 cu ft/min EXCHANGE TIME:
UENT AREA: 200 sq.in. UENT HEIGHT: 90 in.

I FRI A M FIRE STARTED DUE TO: Time 1 15 6 0 30 Fire Origin 6 0 40 I 0 I 0 Thar Failure

FRI Time or 2 min., whichever is greater.

DETECTION:

Manual:

Occupied 0% of time in port and 35% of time at sea.

Automatic:

Rate of temperature rise detection system (RR) Photo electric smoke detection system (P)

FIRST AID FIRE PROTECTION:

- 1 Hand portable monoammonium phosphate fire extinguisher
- 1 Hand portable Halon fire extinguisher (1301)

AUTOMATED FIRE PROTECTION SYSTEMS:

MANUAL FIRE FIGHTING EQUIPMENT:

Compartment: 1-239-0-Q DRY LAB

Barriers (Adjoining Compts ID a	Mat ID	D∕H	Area- sq.ft.	Tbar	Dbar	%heat rel	
1-223-2-LP PASSAGE 1-239-1-LP PASSAGE 1-245-1-Q SCIENCE 1-245-1-Q SCIENCE 1-255-0-Q ELECTRON 1-255-1-A REEFER	ING CONTROL CENTE	W2 W2 W2 W2 W2 W2 F3 C3 C3	0 1 0 0 0 0 0	416.0 200.0 83.2 32.5 124.8 234.0 149.5 488.0 54.0 27.0 27.0	25 25 25 25 25 25 25 25 10 10	40 40 40 40 40 40 300 100 100	30 30 30 30 30 30 5 5 5
01-239-4-L SCIENTIS 01-239-6-LP PASSAGE		C3	0	165.0 64.0	10 10	100	5 5

Compartment: 1-239-1-LP PASSAGE

USE: LP Passageways

AREA: 38 sq.ft. DECK HEIGHT: 13.0 ft. VOLUME: 499 cu.ft.

UNACCEPTABLE LOSS: Code 8 (All compartments of one type lost to fire)

THRESHOLD FREQUENCY OF UNACCEPTABLE LOSS: 0.1000 per ship year

FREQUENCY OF ESTABLISHED BURNING: 0.0001

FUEL LOAD: 3,200 BTUs/sq.ft.

Paint, cable insulation laminate on blkhds-no dropped ceiling

UENTILATION: 99 cu ft/min EXCHANGE TIME: 5.0 min.

UENT AREA: 500 sq.in. UENT HEIGHT: 12 in.

FIRE STARTED DUE TO:	1	I	FRI Time	A	М
Fire Origin	· ·	95	20	0	20
Tbar Failure	1	80	20	0	30
Dbar Failure	1	40	*	0	0
* calculate	d as	(100	- % He	at	Release)/1

calculated as (100 - % Heat Release)/100 X FRI Time or 2 min., whichever is greater.

DETECTION:

Manual:

Occupied 30% of time in port and 50% of time at sea.

Automatic:

Photo electric smoke detection system (P)

FIRST AID FIRE PROTECTION:

1 Hand portable carbon dioxide fire extinguisher

AUTOMATED FIRE PROTECTION SYSTEMS:

MANUAL FIRE FIGHTING EQUIPMENT:

Compartment: 1-239-1-LP PASSAGE

Barri (Adjoining Co	Mat ID	D∕H	Area- sq.ft.	Tbar	Dbar	%heat rel	
1-223-0-C	AFT REPAIR NO.3 & DAMAGE	W2	1	78 .0	25	40	30
1-239-0-Q	DRY LAB	W2	1	83.2	25	40	30
1-245-1-Q	SCIENCE REEFER MACHY. ROO	W2	1	78 .0	25	40	30
2-223-0-C	ENGINEERING CONTROL CENTE	F3	0	38.4	25	300	5
01-218-5-LP	PASSAGE	C3	0	38.4	10	100	5

Compartment: 1-239-2-A PHOTO LAB

USE: Q Areas usually unoccupied: engineering, electronics, galleys

AREA: 128 sg.ft. DECK HEIGHT: 13.0 ft. VOLUME: 1,664 cu.ft.

UNACCEPTABLE LOSS: Code 4 (2 compartments of one type lost to fire) THRESHOLD FREQUENCY OF UNACCEPTABLE LOSS: 1.0000 per ship year

FREQUENCY OF ESTABLISHED BURNING: 0.0023

FUEL LOAD: 120,000 BTUs/sq.ft.

Fuel load in psf = $15 \times \text{height of deck}$.

VENTILATION: 166 cu ft/min EXCHANGE TIME: 10.0 min.

UENT AREA: 200 sq.in. UENT HEIGHT: 90 in.

FIRE STARTED DUE TO:	! !	I	FRI Time	Α	М
Fire Origin		20	5	0	20
Tbar Failure	1	10	5	Û	40
Dbar Failure	1	0	*	0	0

* calculated as (100 - % Heat Release)/100 X FRI Time or 2 min., whichever is greater.

DETECTION:

Manual:

Occupied 5% of time in port and 10% of time at sea.

Automatic:

Rate of temperature rise detection system (RR) Photo electric smoke detection system (P)

AUTOMATED FIRE PROTECTION SYSTEMS:

MANUAL FIRE FIGHTING EQUIPMENT:

Compartment:	1-239-2-A PHOTO	LAB					
Barr (Adjoining C	iers compts ID and Name)	Mat ID	D/H	Area- sq.ft.	Tbar	Dbar	%heat rel
1-223-2-LP	PASSAGE	W 2	•	208.0	25	40	20
1-223-2-LF	BOAT GEAR LOCKER	ພ2 ຟ2	0	104.0	25 25	40 40	30 30
1-255-2-TS	STAIRCASE	พร	Ö	104.0	5	80	5
2-223-0-C	ENGINEERING CONTROL CEN	TE F3	0	47.6	2 5	300	5
2-223-2-LP	PASSAGE	F3	0	64.0	25	300	5
2-251-2-A	BATTERY ROOM	F3	0	16.4	25	300	5
01-239-8-A	FAN ROOM	C3	0	128.0	10	100	5

Compartment: 1-245-1-Q SCIENCE REEFER MACHY. ROOM

USE: Q Areas usually unoccupied: engineering, electronics, galleys

AREA: 81 sq.ft. DECK HEIGHT: 13.0 ft. VOLUME: 1,060 cu.ft.

UNACCEPTABLE LOSS: Code 2 (Major item involved in fire)

THRESHOLD FREQUENCY OF UNACCEPTABLE LOSS: 0.1000 per ship year

FREQUENCY OF ESTABLISHED BURNING: 0.0033

FUEL LOAD: 12,000 BTUs/sq.ft.

UENTILATION: 530 cu ft/min EXCHANGE TIME: 2.0 min.

UENT AREA: 10 sq.in. UENT HEIGHT: 1 in.

FIRE STAR	RTED DUE	ro·		1	I	FRI Tim	A ne	М	
Fire	Origin			1	100	999	0	20	
	Failure			ļ	100	999	0	40	
Dbar	Failure			1	0	4	• 0	0	
		*	calculated	45	(100	- %	Heat	Release)/100) ×

* calculated as (100 - % Heat Release)/100 X FRI Time or 2 min., whichever is greater.

DETECTION:

Manual:

Occupied 1% of time in port and 1% of time at sea.

Automatic:

Ionization smoke detection system (I)
Photo electric smoke detection system (P)

AUTOMATED FIRE PROTECTION SYSTEMS:

MANUAL FIRE FIGHTING EQUIPMENT:

- 1 1 1/2" Seawater hand line with "all purpose nozzle" 50 ft.
- 2 1 1/2" AFFF (3%) hand line with SFL variable nozzle 50 ft.

Compartment: 1-245-1-Q SCIENCE REEFER MACHY. ROOM

D							
	riers Compts ID and Name)	ID	D/H	Area- sq.ft.	TDar	DDar	%heat rel
1-239-0-Q	DRY LAB	₩2	0	32.5	25	40	30
1-239-0-Q	DRY LAB	W2	Ŏ	124.8	25	40	30
1-239-1-LP 1-255-1-A	Passage Reefer	₩2 ₩2	1 0	<i>7</i> 8.0 110.5	25 25	40 40	30 30
2-223-0-C	ENGINEERING CONTROL CENTE		0	78 . 4	25	300	5
2-223-1-LP 01-218-5-LP	Passage Passage	F3 C3	0 0	3 . 2 67 . 6	25 10	300 100	5 5
01-239-3-L	SCIENTIST SR	C3	0	14.0	10	100	5

Compartment: 1-255-0-Q ELECTRONICS LAB

USE: Q Areas usually unoccupied: engineering, electronics, galleys

AREA: 288 sq.ft. DECK HEIGHT: 13.0 ft. VOLUME: 3,744 cu.ft.

UNACCEPTABLE LOSS: Code 3 (Full compartment lost to fire)

THRESHOLD FREQUENCY OF UNACCEPTABLE LOSS: 0.1000 per ship year

FREQUENCY OF ESTABLISHED BURNING: 0.0023

FUEL LOAD: 28,000 BTUs/sq.ft.

624 cu ft/min EXCHANGE TIME: sq.in. UENT HEIGHT: 90 in. UENTILATION: 6.0 min.

UENT AREA: 175 sq.in.

FIRE STARTED DUE TO: I FRI 1 Time 1 15 6 0 20 Fire Origin Thar Failure 1 10 6 0 40

FRI Time or 2 min., whichever is greater.

DETECTION:

Manual:

Occupied 25% of time in port and 50% of time at sea.

Automatic:

Ionization smoke detection system (I) Photo electric smoke detection system (P)

FIRST AID FIRE PROTECTION:

1 Hand portable Halon fire extinguisher (1301)

AUTOMATED FIRE PROTECTION SYSTEMS:

MANUAL FIRE FIGHTING EQUIPMENT:

Compartment:	1-255-0-Q	ELECTRONICS LAB
~		

Barriers (Adjoining Compts ID and Name)	Mat ID	D∕H	Area- sq.ft.	Tbar	Dbar	%heat rel
1-223-2-LP PASSAGE 1-239-0-Q DRY LAB 1-255-1-A REEFER 1-271-0-Q WET LAB 2-223-0-C ENGINEERING CONTROL CENTE 2-262-1-Q IC/GYRO ROOM 2-262-2-QF FAN ROOM 01-255-0-L SCIENTIST SR 01-255-2-L SCIENTIST SR 01-255-4-LW WC & SHR	W2 W2 W6 F3 F3 C3	1 0 0 0 0 0	208.0 234.0 208.0 234.0 88.2 22.2 177.6 112.0 150.8	25 25 25 10 25 25 25 10	100 300 300	30 30 30 5 5 5 5 5 5

Compartment: 1-255-1-A REEFER

USE: AR Refrigerated Storage Spaces

AREA: 320 sq.ft. DECK HEIGHT: 13.0 ft. VOLUME: 4,160 cq.ft.

UNACCEPTABLE LOSS: Code 3 (Full compartment lost to fire)

THRESHOLD FREQUENCY OF UNACCEPTABLE LOSS: 0.0330 per ship year

FREQUENCY OF ESTABLISHED BURNING: 0.0009

FUEL LOAD: 1,200,000 BTUs/sq.ft.

UENTILATION: cu ft/min EXCHANGE TIME: min.

UENT AREA: sq.in. UENT HEIGHT: 0 in.

FIRE STARTED DUE TO: i I FRI A Time Fire Origin 1 60 999 0 0 Tbar Failure 50 999 0 Dbar Failure | 40 × v = 400 × v = 40

DETECTION:

Manual:

Occupied 0% of time in port and 5% of time at sea.

Automatic:

AUTOMATED FIRE PROTECTION SYSTEMS:

MANUAL FIRE FIGHTING EQUIPMENT:

Compartment: 1-255-1-A REEFER

Barriers (Adjoining Compts ID and Name)			D∕H	Area- sq.ft.	Tbar	Dbar	%heat rel
1-239-0-Q	DRY LAB	W2	a	149.5	25	40	30
1-245-1-Q	SCIENCE REEFER MACHY. ROO		Õ	110.5	25	40	30
1-255-0-Q	ELECTRONICS LAB	W2	Ö	208.0	25	40	30
1-271-0-Q	WET LAB	W6	1	260 0	10	100	5
2-223-0-C	ENGINEERING CONTROL CENTE	F3	0	67.9	25	300	5
2-223-1-LP	Passage	F3	0	32.0	25	300	5
2-262-1-Q	IC/GYRO ROOM	F3	0	220.1	25	300	5
01-218-5-LP	PASSAGE	C3	0	96.0	10	100	5
01-255-0-L	SCIENTIST SR	C3	0	25.5	10	100	5
01-255-1-LW	wc & Shr	C3	0	22.5	10	100	5
01-255-3-L	SCIENTIST SR	C3	0	149.3	10	100	5
01-255-5-LW	WC & SHR	C3	0	26 · 7	10	100	5

Compartment: 1-255-2-TS STAIRCASE

USE: TS Staircases

AREA: 128 sq.ft. DECK HEIGHT: 13.0 ft. VOLUME: 1,664 cu.ft.

UNACCEPTABLE LOSS: Code 8 (All compartments of one type lost to fire)

THRESHOLD FREQUENCY OF UNACCEPTABLE LOSS: 0.1000 per ship year

FREQUENCY OF ESTABLISHED BURNING: 0.0001

FUEL LOAD: 800 BTUs/sq.ft.

Paint-no carpet or laminate

332 cu ft/min EXCHANGE TIME: sq.in. UENT HEIGHT: 1 in. UENTILATION: 5.0 min.

UENT AREA: 10 sq.in.

I FRI A FIRE STARTED DUE TO: i -Time 1 100 999 0 30 Fire Origin 1 100 999 0 40 Thar Failure Thar railure 90 * O O * calculated as (100 - % Heat Release)/100 X

FRI Time or 2 min., whichever is greater.

DETECTION:

Manual:

Occupied 30% of time in port and 50% of time at sea.

Automatic:

AUTOMATED FIRE PROTECTION SYSTEMS:

MANUAL FIRE FIGHTING EQUIPMENT:

Compartment: 1-255-2-TS STAIRCASE

Barri (Adjoining Co	Mat ID	D∕H	Area- sq.ft.	Tbar	Dbar	%heat rel	
1-223-2-LP	PASSAGE	ผร	1	208.0	5	80	5
1-239-2-A	PHOTO LAB	W5	ō	104.0	5		5
1-271-2-0	RECOMPRESSION AREA & DIVE		Ŏ	104.0	10	100	5
2-223-2-LP	PASSAGE	F3	Ō	64.0	25	300	5
2-251-2-A	BATTERY ROOM	F3	0	3.6	25	300	5
2-256-2-TS	STAIRCASE	F3	1	60.4	25	300	5
01-255-10-A	STOREROOM	C3	0	64.0	10	100	5
01-255-8-A	XFMR FECT HELO	C3	0	25.6	10	100	5
01-261-2-TS	STAIRCASE	C3	1	38.4	10	100	5

Compartment: 1-271-0-Q WET LAB

USE: QS Scientific Spaces

AREA: 784 sq.ft. DECK HEIGHT: 13.0 ft. VOLUME: 10,192 cu.ft.

UNACCEPTABLE LOSS: Code 3 (Full compartment lost to fire)

THRESHOLD FREQUENCY OF UNACCEPTABLE LOSS: 0.1000 per ship year

FREQUENCY OF ESTABLISHED BURNING: 0.0023

FUEL LOAD: 16,000 BTUs/sq.ft.

UENTILATION: 2,548 cu ft/min EXCHANGE TIME: 4.0 min.

UENT AREA: 200 sq.in. UENT HEIGHT: 90 in.

FIRE	STARTED	DUE	TO:	1	}	I	FRI Time	A	М
,	Fire Ori	 gin			- -	 20	8	0	30
	Tbar Fai			1		0	8	0	40
,	Dhar Fai	lore		ı	ı	n	*	n	n

* calculated as (100 - % Heat Release)/100 X FRI Time or 2 min., whichever is greater.

DETECTION:

Manual:

Occupied 0% of time in port and 35% of time at sea.

Automatic:

Rate of temperature rise detection system (RR) Photo electric smoke detection system (P)

FIRST AID FIRE PROTECTION:

- 1 Hand portable monoammonium phosphate fire extinguisher
- 1 Hand portable Halon fire extinguisher (1301)

AUTOMATED FIRE PROTECTION SYSTEMS:

MANUAL FIRE FIGHTING EQUIPMENT:

Compartment: 1-271-0-Q WET LAB

Barri (Adjoining Co	ers mpts ID and Name)	-	D∕H	Area- sq.ft.	Tbar	Dbar	%heat rel
1-223-2-LP 1-255-0-Q 1-255-1-A 1-287-2-Q 1-287-2-Q 1-295-1-Q 2-271-1-L 2-271-2-L	UESTIBULE CREW BERTHING CREW BERTHING	W2 W6 W6 W2 W2 W2 F3 F3	1 0 1 0 0 1	208.0 234.0 260.0 104.0 208.0 286.0 245.6 213.6	10 10 25 25 25 25 25	100 100 40 40 40 300 300	30 5 5 30 30 30 5
01-218-5-LP	STAIRCASE WR WC & SHR WR WC & SHR WR WC & SHR WR WC & SHR CREW BERTHING PASSAGE	F3 F3 F3 F3 F3 C3	0 0 0 0 0 0	112.8 18.0 74.4 42.4 13.2 32.0 32.0	25 25 25 25 25 10	300 300 300 300 100	55555555
~	SCIENTIST SR SCIENTIST LIBRARY/CONFERE WC & SHR WC & SHR SCIENTIST SR	C3 C3 C3 C3 C3	0 0 0 0	229.7 256.0 25.0 25.0 192.2	10 10	100 100 100 100 100	5 5 5 5

Compartment: 1-271-2-Q RECOMPRESSION AREA & DIVE GEAR LOCKER

USE: Q Areas usually unoccupied: engineering, electronics, galleys

AREA: 525 sq.ft. DECK HEIGHT: 13.0 ft. VOLUME: 6,832 cu.ft.

UNACCEPTABLE LOSS: Code 2 (Major item involved in fire)

THRESHOLD FREQUENCY OF UNACCEPTABLE LOSS: 0.3300 per ship year

FREQUENCY OF ESTABLISHED BURNING: 0.0001

FUEL LOAD: 16,000 BTUs/sq.ft.

VENTILATION: 976 cu ft/min EXCHANGE TIME: 7.0 min.

UENT AREA: 225 sq.in. UENT HEIGHT: 90 in.

FIRE	STARTED	DUE	TO:	1	I	FRI Time	A	М
- 1	Fire Ori	gin		i	30	4	0	20
	Tbar Fai	_		1	20	4	0	40
1	Ohar Fai	lora		1	1 በ	*	n	n

* calculated as (100 - % Heat Release)/100 X FRI Time or 2 min., whichever is greater.

DETECTION:

Manual:

Occupied 25% of time in port and 15% of time at sea.

Automatic:

Ionization smoke detection system (I)
Photo electric smoke detection system (P)

AUTOMATED FIRE PROTECTION SYSTEMS:

MANUAL FIRE FIGHTING EQUIPMENT:

Compartment: 1-271-2-Q RECOMPRESSION AREA & DIVE GEAR LOCKER

Barr (Adjoining C	iers ompts ID and Name)		D/H	Area- sq.ft.		Dbar	%heat rel
1-223-2-LP	PASSAGE	W2	0	96.2	25	40	30
1-223-2-LP	PASSAGE	W2	2	182.0	25	40	30
1-255-2-TS	STAIRCASE	₩ 6	0	104.0	10	100	5
1-278-2-TS	STAIRCASE	ω5	0	52.0	5	80	5
1-278-2-TS	STAIRCASE	ພ 5	0	52 .0	5	80	5
1-278-2-TS	STAIRCASE	ω5	0	130.0	5	80	5
1-302-2-LW	WTR WC & SHR	ωз	0	65.0	25		25
1-302-2-LW	wtr wc & shr	พз	1	91.0	25		25
1-307-2-A	ARCTIC GEAR LOCKERSCIEN		0	104.0	25		30
2-271-4-LP	PASSAGE	F3	0	31.2	25		5
2-271-6-L	CREW BERTHING	F3	G	157.9	25	300	5
2-275-2-TS	STAIRCASE	F3	1	66.0	2 5	300	5
2-284-2-LW	wr wc & shr	F3	0	119.6	25	300	5
2-295-2-L	CREW BERTHING	F3	0	100.9	25	300	5
2-295-4-LW	wr wc & shr	F3	0	50.0	25	300	5 5 5
01-255-6-LP	PASSAGE	C3	1	59.2	10	100	5
01-271-4-L	SCIENTIST SR	C3	0	118.6	10	100	5
01-271-6-LW	WR WC & SHR	C3	0	38.7	10	100	5
01-271-8-L	SCIENTIST SR	C3	0	54.3	10	100	5
01-278-2-LW	wr wc & shr	C3	0	39.2	10	100	5
01-292-2-LP	PASSAGE	C3	8	3. <i>7</i>	10	100	5 5
01-292-4-L	SCIENTIST SR	C3	0	117.3	10	100	5
01-292-6-LW	wr wc & shr	C3	0	34.3	10	100	5
01-292-8-L		C3	0	18.6	10	100	5
01-298-2-LW	wr wc & shr	C3	0	41.6	10	100	5

Compartment: 1-278-2-TS STAIRCASE

USE: TS Staircases

AREA: 40 sq.ft. DECK HEIGHT: 13.0 ft. UOLUME: 520 cu.ft.

UNACCEPTABLE LOSS: Code 8 (All compartments of one type lost to fire) THRESHOLD FREQUENCY OF UNACCEPTABLE LOSS: 0.1000 per ship year

FREQUENCY OF ESTABLISHED BURNING: 0.0001

FUEL LOAD: 0 BTUs/sq.ft. Paint-no carpet or laminate

104 cu ft/min EXCHANGE TIME:
Sq.in. UENT HEIGHT: 1 ir UENTILATION: 5.0 min.

UENT AREA: 10 sq.in. UENT HEIGHT: 1 in.

FIRE STARTED DUE TO: I I FRI A ı Time 1 100 999 0 30 Fire Origin 1 100 999 0 40 Thar Failure Dbar Failure 90 0

* calculated as (100 - % Heat Release)/100 X FRI Time or 2 min., whichever is greater.

DETECTION:

Manual:

Occupied 30% of time in port and 50% of time at sea. Automatic:

AUTOMATED FIRE PROTECTION SYSTEMS:

MANUAL FIRE FIGHTING EQUIPMENT:

Compartment: 1-278-2-TS STAIRCASE

Barri (Adjoining Co	ers ompts ID and Name)			Mat ID	D∕H	Area- sq.ft.	Tbar	Dbar	%heat rel
1-223-2-LP 1-271-2-Q 1-271-2-Q 1-271-2-Q 2-275-2-TS 2-284-2-LW 01-255-6-LP 01-271-4-L	PASSAGE RECOMPRESSION AREA RECOMPRESSION AREA RECOMPRESSION AREA STAIRCASE WR WC & SHR PASSAGE SCIENTIST SR	&	DIVE	W 5	1 0 0 0 1 0	130.0 52.0 52.0 130.0 38.0 2.0 6.0 34.0	5 5 5 25 25 10	80 80 80 300 300 100	5555555

Compartment: 1-287-2-Q WET LAB NO.2

USE: QS Scientific Spaces

AREA: 451 sq.ft. DECK HEIGHT: 13.0 ft. VOLUME: 5,865 cu.ft.

UNACCEPTABLE LOSS: Code 3 (Full compartment lost to fire)

THRESHOLD FREQUENCY OF UNACCEPTABLE LOSS: 0.1000 per ship year

FREQUENCY OF ESTABLISHED BURNING: 0.0023

FUEL LOAD: 16,000 BTUs/sq.ft.

UENTILATION: 1,466 cu ft/min EXCHANGE TIME: 4.0 min.

VENT AREA: 200 sq.in. UENT HEIGHT: 90 in.

FIRE	STARTED	DUE	TO :	 	 I	FRI Time	A	М
F	Fire Ori	gin		1	 70	6	0	30
	Tbar Fai			ł	0	6	0	40
Т	Dhar Fai	lure		1	ß	*	U	n

* calculated as (100 - % Heat Release)/100 X FRI Time or 2 min., whichever is greater.

DETECTION:

Manual:

Occupied 0% of time in port and 35% of time at sea.

Automatic:

Rate of temperature rise detection system (RR) Photo electric smoke detection system (P)

FIRST AID FIRE PROTECTION:

- 1 Hand portable monoammonium phosphate fire extinguisher
- 1 Hand portable Halon fire extinguisher (1301)

AUTOMATED FIRE PROTECTION SYSTEMS:

MANUAL FIRE FIGHTING EQUIPMENT:

Compartment: 1-287-2-Q WET LAB NO.2

Barri (Adjoining Co	ers mpts ID and Name)		D/H	Area- sq.ft.		Dbar	%heat rel
1-223-2-LP 1-271-0-Q 1-271-0-Q 1-295-1-Q 1-311-2-T 1-311-2-T 1-319-0-LP 2-271-2-L 2-271-4-LP	UESTIBULE ELEVATOR ELEVATOR PASSAGE CREW BERTHING PASSAGE	W2 W2 W2 W2 W5 W6 W2 F3	1 0 0 1 0 1 0	416.0 104.0 208.0 213.2 98.8 104.0 104.0 32.0 73.6	25 25 25 25 25 10 25 25	40 40 40 80 100 40 300	30 30 30 30 5 5 5
2-291-2-LW 2-291-4-L 2-311-0-Q 2-311-2-T 01-271-2-Q	WR WC & SHR WR WC & SHR CREW BERTHING WINCH ROOM ELEUATOR SCIENTIST LIBRARY/CONFERE HOIST EQPT ROOM SCIENTIST COMM CENTER	F3 F3 F3 F3 C3 C3	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	32.0 40.0 206.4 64.0 3.2 394.4 4.0 52.8	25 25 25 25 10	300 300 300 300 100	5 5 5 5 5 5 5 5 5

Compartment: 1-295-1-Q VESTIBULE (MAIN DECK LEUEL)

Zero strength barrier above.

USE: QS Scientific Spaces

AREA: 528 sq.ft. DECK HEIGHT: 13.0 ft. VOLUME: 6,864 cu.ft.

UNACCEPTABLE LOSS: Code 3 (Full compartment lost to fire)

THRESHOLD FREQUENCY OF UNACCEPTABLE LOSS: 0.1000 per ship year

FREQUENCY OF ESTABLISHED BURNING: 0.0023

FUEL LOAD: 24,000 BTUs/sq.ft.

UENTILATION: 1,372 cu ft/min EXCHANGE TIME: 5.0 min. UENT AREA: 200 sq.in. UENT HEIGHT: 90 in.

FIRE STARTED DUE TO: I FRI A Time 1 90 999 0 30 Fire Origin Thar Failure 1 90 999 0 40 0 Dbar Failure ß * 0

* calculated as (100 - % Heat Release)/100 X FRI Time or 2 min., whichever is greater.

DETECTION:

Manual:

Occupied 0% of time in port and 20% of time at sea.

Automatic:

Rate of temperature rise detection system (RR) Photo electric smoke detection system (P)

FIRST AID FIRE PROTECTION:

1 Hand portable monoammonium phosphate fire extinguisher

AUTOMATED FIRE PROTECTION SYSTEMS:

MANUAL FIRE FIGHTING EQUIPMENT:

Compartment: 1-295-1-Q UESTIBULE (MAIN DECK LEUEL)

	ciers Compts ID and Name)	Mat ID	D/H	Area- sq.ft.	Tbar	Dbar	%heat rel
1-271-0-Q 1-287-2-Q 1-311-2-T 1-319-0-LP 2-271-3-LP 2-291-1-LW 2-291-3-L 2-295-1-LW 2-295-3-L 2-311-0-Q 01-295-1-Q	WET LAB WET LAB NO.2 ELEVATOR PASSAGE PASSAGE WR WC & SHR CREW BERTHING WR WC & SHR CREW BERTHING WR WC & SHR CREW BERTHING WINCH ROOM VESTIBULE (01 LEVEL)	W2 W35 W3 F3 F3 F3 F3 C0	1 1 2 0 0 0 0 0	286.0 213.2 98.8 208.0 137.6 8.0 174.4 10.0 21.2 176.0 528.0	25 25 25 25 25 25 25 25 25 25	40 40 80 40 300 300 300 300 300	30 30 5 30 5 5 5 5 5

Compartment: 1-302-2-LW WTR WC & SHR

USE: LW Wash room, water closet and shower areas

35 sg.ft. DECK HEIGHT: 13.0 ft. UOLUME: 455 ca.ft.

UNACCEPTABLE LOSS: Code 8 (All compartments of one type lost to fire)

THRESHOLD FREQUENCY OF UNACCEPTABLE LOSS: 0.1000 per ship year

FREQUENCY OF ESTABLISHED BURNING: 0.0002

FUEL LOAD: 4,000 BTUs/sq.ft.

UENTILATION: 113 cu ft/min EXCHANGE TIME: UENT AREA: 175 sq.in. UENT HEIGHT: 90 in. 4.0 min.

FIRE STARTED DUE TO: I I FRI A . Time 1 100 999 0 30 Fire Origin Tbar Failure 1 100 999 0 40

DETECTION:

Manual:

Occupied 5% of time in port and 15% of time at sea.

Automatic:

AUTOMATED FIRE PROTECTION SYSTEMS:

MANUAL FIRE FIGHTING EQUIPMENT:

Compartment: 1-302-2-LW WTR WC & SHR

Barri (Adjoining Co	ers Ompts ID and Name)	Mat ID	D/H	Area- sq.ft.	Tbar	Dbar	%heat rel
1-223-2-LP 1-271-2-Q 1-271-2-Q 1-307-2-A 2-295-2-L 01-292-2-LP 01-292-4-L	PASSAGE RECOMPRESSION AREA & DIVE RECOMPRESSION AREA & DIVE ARCTIC GEAR LOCKERSCIEN CREW BERTHING PASSAGE SCIENTIST SR	ωз	0 0 1 0 0	65.0 65.0 91.0 91.0 35.0 3.5	25 25 25 25 25 10	60 60 60 300 100	25 25 25 25 5 5

COMPARTMENT FIRE SAFETY SUMMARY FOR POLAR ICEBREAKER REPLACEMENT

(drawings dated 5/12/1987)

Compartment: 1-307-2-A ARCTIC GEAR LOCKER--SCIENTIST

USE: AG Small Storage Spaces -- Gear Lockers

AREA: 220 sq.ft. DECK HEIGHT: 13.0 ft. VOLUME: 2,862 cu.ft.

UNACCEPTABLE LOSS: Code 3 (Full compartment lost to fire)

THRESHOLD FREQUENCY OF UNACCEPTABLE LOSS: 1.0000 per ship year

FREQUENCY OF ESTABLISHED BURNING: 0.0009

120,000 BTUs/sq.ft.

Based on hanging wetsuits or parkas

286 cu ft/min EXCHANGE TIME: 10.0 min. UENTILATION:

UENT AREA: 10 sq.in. UENT HEIGHT: 1 in.

FIRE STARTED DUE TO: I FRI A 1 Time 5 3 0 40 5 3 0 30 Fire Origin - 1 3 0 Thar Failure Dbar Failure 0 Ð

> * calculated as (100 - % Heat Release)/100 X FRI Time or 2 min., whichever is greater.

DETECTION:

Manual:

Occupied 5% of time in port and 10% of time at sea.

Automatic:

Rate of temperature rise detection system (RR) Photo electric smoke detection system (P)

AUTOMATED FIRE PROTECTION SYSTEMS:

MANUAL FIRE FIGHTING EQUIPMENT:

Compartment: 1-307-2-A ARCTIC GEAR LOCKER--SCIENTIST

Barri (Adjoining Co	ers mpts ID and Name)	Mat ID	D/H	Area- sq.ft.	Tbar	Dbar	%heat rel
1-223-2-LP 1-271-2-Q	PASSAGE RECOMPRESSION AREA & DIVE	ພ2 ພ2	1 0	150.8 104.0	25 25	40 40	30 30
1-302-2-LW 1-319-0-LP	WTR WC & SHR PASSAGE	₩3 ₩2	0	91.0 102.7	25 25	60 40	25 30
1-319-0-LP 2-295-2-L	PASSAGE CREW BERTHING	W2 F3	0	104.0 53.7	25 25	40 300	30 5
2-311-0-Q 01-292-2-LP	WINCH ROOM PASSAGE	F3 C3	0	166.5 58.0	25 10	300 100	5 5
01-252-2-LP 01-311-4-LW 01-311-6-L	WR WC & SHR SCIENTIST SR	C3	0	38.0 73.0	10 10	100	5 5
01-319-0-C	SCIENCE & WINCH CONTROL S	C3	0	46 . 6	10	100	5

Compartment: 1-311-2-T ELEUATOR

USE: T Elevators, dumb waiters

60 sq.ft. DECK HEIGHT: 13.0 ft. VOLUME: 790 cu.ft. AREA:

UNACCEPTABLE LOSS: Code 8 (All compartments of one type lost to fire)

THRESHOLD FREQUENCY OF UNACCEPTABLE LOSS: 1.0000 per ship year

FREQUENCY OF ESTABLISHED BURNING: 0.0001

FUEL LOAD: 4,000 BTUs/sq.ft.

Accumulated dust and grease and cable insulation

395 cu ft/min EXCHANGE TIME: 2.0 min. UENTILATION:

UENT AREA: 10 sq.in. UENT HEIGHT: 1 in.

FIRE STARTED DUE TO:	1	I	FRI Time	A	М
Fire Origin		100	999	0	30
Tbar Failure	ŧ	100	999	0	40
Dbar Failure	i	30	*	0	0
+11		(100	_ % 11_	-+	Palassa) /100

* calculated as (100 - % Heat Release)/100 X FRI Time or 2 min., whichever is greater.

DETECTION:

Manual:

Occupied 5% of time in port and 5% of time at sea.

Automatic:

Photo electric smoke detection system (P)

AUTOMATED FIRE PROTECTION SYSTEMS:

MANUAL FIRE FIGHTING EQUIPMENT:

Compartment: 1-311-2-T ELEUATOR

Barr (Adjoining C	iers ompts ID and Name)	Mat ID	D/H	Area- sq.ft.	Tbar	Dbar	%heat rel
1-287-2-Q 1-287-2-Q 1-295-1-Q 1-319-0-LP 2-311-2-T 01-311-2-Q	WET LAB NO.2 WET LAB NO.2 VESTIBULE PASSAGE ELEVATOR HOIST EQPT ROOM	W5 W6 W5 W5 F3 C3	0 1 2 0 0	98.8 104.0 98.8 104.0 60.8 60.8	5 10 5 5 25 10	80 100 80 80 300 100	5 5 5 5 5 5

Compartment: 1-319-0-LP PASSAGE

USE: LP Passageways

AREA: 347 sq.ft. DECK HEIGHT: 13.0 ft. UOLUME: 4,518 cu.ft.

UNACCEPTABLE LOSS: Code 8 (All compartments of one type lost to fire)

THRESHOLD FREQUENCY OF UNACCEPTABLE LOSS: 0.1000 per ship year

FREQUENCY OF ESTABLISHED BURNING: 0.0001

FUEL LOAD: 3,200 BTUs/sq.ft.

Paint, cable insulation laminate on blkhds-no dropped ceiling

UENTILATION: 903 cu ft/min EXCHANGE TIME: 5.0 min.

UENT AREA: 125 sq.in. UENT HEIGHT: 12 in.

FIRE STARTED DUE TO: I I FRI A i Time Fire Origin 1 95 20 0 40 20 0 60 I 80 Tbar Failure Dbar Failure 0 40 * a * calculated as (100 - % Heat Release)/100 X

FRI Time or 2 min., whichever is greater.

DETECTION:

Manual:

Occupied 30% of time in port and 50% of time at sea.

Automatic:

Photo electric smoke detection system (P)

FIRST AID FIRE PROTECTION:

1 Hand portable monoammonium phosphate fire extinguisher

AUTOMATED FIRE PROTECTION SYSTEMS:

MANUAL FIRE FIGHTING EQUIPMENT:

Compartment: 1-319-0-LP PASSAGE

Barr (Adjoining C	iers ompts ID and Name)	Mat ID	D/H	Area- sq.ft.	Tbar	Dbar	%heat rel
1-223-2-LP	PASSAGE	W2	1	52.0	25	40	30
1-287-2-Q	WET LAB NO.2	W2	0	104.0	25	40	30
1-295-1-Q	VESTIBULE	W2	0	208.0	25	40	30
1-307-2-A	ARCTIC GEAR LOCKERSCIEN	W2	0	102.7	25	40	30
1-307-2-A	ARCTIC GEAR LOCKERSCIEN	W2	0	104.0	25	40	30
1-311-2-T	ELEUATOR	ω 5	0	104.0	5	80	5
1-326-0-Q	UENT TRUNK	W2	0	104.0	25	40	30
2-311-0-Q	WINCH ROOM	F3	0	344.4	25	300	5
2-311-2-T	ELEUATOR	F3	0	3,2	25	300	5
01-319-0-C	SCIENCE & WINCH CONTROL S	C3	0	347.6	10	100	5

Compartment: 1-326-0-Q UENT TRUNK

USE: Q Areas usually unoccupied: engineering, electronics, galleys

AREA: 144 sq.ft. DECK HEIGHT: 13.0 ft. VOLUME: 1,882 cu.ft.

UNACCEPTABLE LOSS: Code 8 (All compartments of one type lost to fire)

THRESHOLD FREQUENCY OF UNACCEPTABLE LOSS: 0.0000 per ship year

FREQUENCY OF ESTABLISHED BURNING: 0.0000

FUEL LOAD:

0 BTUs/sq.ft.

UENTILATION:

941 cu ft/min EXCHANGE TIME: 2.0 min.

UENT AREA:

sq.in.

VENT HEIGHT: 0 in.

FIRE STARTED DUE TO:	1	Ι	FRI Time	A	М
Fire Origin	1	0		0	20
Tbar Failure	1	0		0	40
Dbar Failure	1	0	*	0	0
		4400	A 77		P 1

* calculated as (100 - % Heat Release)/100 X FRI Time or 2 min., whichever is greater.

DETECTION:

Manual:

Occupied 25% of time in port and 50% of time at sea.

Automatic:

AUTOMATED FIRE PROTECTION SYSTEMS:

MANUAL FIRE FIGHTING EQUIPMENT:

Compartment:	1-326-0-Q	UENT T	RUNK
--------------	-----------	--------	------

Barriers (Adjoining Compts ID and Name)		Mat ID	D/H	Area- sq.ft.	Tbar	Dbar	%heat rel
1-319-0-LP	PASSAGE	ω2	0	104.0	25	40	30
1-344-0-K	HAZARDOUS METALS ROOM	₩6	0	104.0	10	100	5
2-311-0-Q	WINCH ROOM	F3	0	128.8	25	300	5
2-343-0-A	HAWSER STORES & SCIENCE C	F3	0	16.0	25	300	5
01-319-0-C	SCIENCE & WINCH CONTROL S	C3	0	144.8	10	100	5
			0				

Compartment: 1-328-1-Q PORTABLE UAN

USE: QS Scientific Spaces

AREA: 160 sq.ft. DECK HEIGHT: 13.0 ft. UOLUME: 2,080 cq.ft.

UNACCEPTABLE LOSS: Code 3 (Full compartment lost to fire)

THRESHOLD FREQUENCY OF UNACCEPTABLE LOSS: 0.1000 per ship year

FREQUENCY OF ESTABLISHED BURNING: 0.0000

FUEL LOAD:

0 BTUs/sq.ft.

UENTILATION:

0.0 min.

UENT AREA:

sq.in.

0 cu ft/min EXCHANGE TIME: sq.in. UENT HEIGHT: 0 in.

FIRE STARTED DUE TO: l I FRI 1 Time 0 Fire Origin Tbar Failure 0 Dbar Failure 0 0

* calculated as (100 - % Heat Release)/100 X FRI Time or 2 min., whichever is greater.

DETECTION:

Manual:

Occupied 0% of time in port and 35% of time at sea.

Automatic:

Rate of temperature rise detection system (RR)

Photo electric smoke detection system (P)

AUTOMATED FIRE PROTECTION SYSTEMS:

MANUAL FIRE FIGHTING EQUIPMENT:

Compartment	: 1-328-1-Q	PORTABLE	VAN					
	riers Compts ID and Nam	ne)	Mat ID	D/H	Area- sq.ft.	Tbar	Dbar	%heat rel
2-311-0-Q 2-343-0-A	WINCH ROOM HAWSER STORES	& SCIENCE C	F3 F3	0 0	116.8 43.2		300 300	5 5
				0				

Compartment: 1-328-2-Q PORTABLE VAN

USE: QS Scientific Spaces

AREA: 160 sq.ft. DECK HEIGHT: 13.0 ft. VOLUME: 2,080 cu.ft.

UNACCEPTABLE LOSS: Code 3 (Full compartment lost to fire)

THRESHOLD FREQUENCY OF UNACCEPTABLE LOSS: 0.1000 per ship year

FREQUENCY OF ESTABLISHED BURNING: 0.0000

FUEL LOAD:

0 BTUs/sq.ft.

UENTILATION:

0 cu ft/min EXCHANGE TIME: 0.0 min.

UENT AREA:

UENT HEIGHT: 0 in. sq.in.

FIRE STARTED DUE TO: i I FRI A Time Fire Origin ı Thar Failure Ω 0 0 - 1 Dbar Failure - 1 O

* calculated as (100 - % Heat Release)/100 X FRI Time or 2 min., whichever is greater.

DETECTION:

Manual:

Occupied 0% of time in port and 35% of time at sea.

Automatic:

Rate of temperature rise detection system (RR)

Photo electric smoke detection system (P)

AUTOMATED FIRE PROTECTION SYSTEMS:

MANUAL FIRE FIGHTING EQUIPMENT:

Compartment	1-328-2-Q	PORTABLE	VAN					
-	riers Compts ID and Name)		Mat ID	D/H	Area- sq.ft.	Tbar	Dbar	%heat rel
2-311-0-Q 2-343-0-A	WINCH ROOM HAWSER STORES &	SCIENCE C	F3 F3	0	116.8 43.2		300 300	5 5
				0				

Compartment: 1-328-4-Q PORTABLE VAN

USE: QS Scientific Spaces

AREA: 160 sq.ft. DECK HEIGHT: 13.0 ft. VOLUME: 2,080 cu.ft.

UNACCEPTABLE LOSS: Code 3 (Full compartment lost to fire)

THRESHOLD FREQUENCY OF UNACCEPTABLE LOSS: 0.1000 per ship year

FREQUENCY OF ESTABLISHED BURNING: 0.0000

FUEL LOAD:

0 BTUs/sq.ft.

VENTILATION:

0 cu ft/min EXCHANGE TIME:

0.0 min.

UENT AREA:

sq.in.

UENT HEIGHT: 0 in.

FIRE STARTED DUE TO: I FRI H 1 Time Fire Origin Thar Failure Ω Dbar Failure 0 0 O

* calculated as (100 - % Heat Release)/100 X FRI Time or 2 min., whichever is greater.

DETECTION:

Manual:

Occupied 0% of time in port and 35% of time at sea.

Automatic:

Rate of temperature rise detection system (RR) Photo electric smoke detection system (P)

AUTOMATED FIRE PROTECTION SYSTEMS:

MANUAL FIRE FIGHTING EQUIPMENT:

Compartment	1-328-4-Q	PORTABLE	VAN					
	iers Compts ID and Name)		Mat ID	D/H	Area- sq.ft.	Tbar	Dbar	%heat rel
2-311-0-Q	WINCH ROOM	PATENAE A	F3	0	135.7	25		5
2-343-0-A 2-343-2-A	HAWSER STORES & S BOSN'S LOCKER	SCIENCE C	F3	0	21.0 3.3	25 25	300 300	5 5
				O				

Compartment: 1-344-0-K HAZARDOUS MATLS. ROOM

USE: K Stowage of chemicals/dangerous materials; not gas and oil

AREA: 48 sq.ft. DECK HEIGHT: 13.0 ft. VOLUME: 624 cu.ft.

UNACCEPTABLE LOSS: Code 1 (Fire reaches established burning.)
THRESHOLD FREQUENCY OF UNACCEPTABLE LOSS: 0.0330 per ship year

FREQUENCY OF ESTABLISHED BURNING: 0.0015

FUEL LOAD: 22,666 BTUs/sq.ft.

Misc. Class A - Assumes several cans fail

UENTILATION: 156 cu ft/min EXCHANGE TIME: 4.0 min.

UENT AREA: 10 sq.in. UENT HEIGHT: 1 in.

FIRE STARTED DUE TO: I I FRI A 1 Time 2 0 10 Fire Origin 1 10 ı 25 2 0 40 Tbar Failure Dbar Failure 5 * 0 a * calculated as (100 - % Heat Release)/100 X

* calculated as (100 - % Heat Release)/100 X FRI Time or 2 min., whichever is greater.

DETECTION:

Manual:

Occupied 0% of time in port and 0% of time at sea.

Automatic:

AUTOMATED FIRE PROTECTION SYSTEMS:

MANUAL FIRE FIGHTING EQUIPMENT:

Compartment:	1-344-0-K	HAZARDOU	S MA	TLS.	ROOM			
Barr (Adjoining C	iers ompts ID and Name)		Mat ID	D/H	Area- sq.ft.	Tbar	Dbar	%heat rel
1-326-0-Q 2-343-0-A 01-319-0-C	UENT TRUNK HAWSER STORES & S SCIENCE & WINCH C			0 0 0	104.0 48.0 48.0	10 25 10	100 300 100	5 5 5

Compartment: 2-4-0-A STOREROOM

-

USE: AS Storerooms

AREA: 494 sq.ft. DECK HEIGHT: 9.0 ft. UOLUME: 4,452 cu.ft.

UNACCEPTABLE LOSS: Code 4 (2 compartments of one type lost to fire)
THRESHOLD FREQUENCY OF UNACCEPTABLE LOSS: 0.3300 per ship year

FREQUENCY OF ESTABLISHED BURNING: 0.0009

FUEL LOAD: 1,440,000 BTUs/sq.ft.

Boxes of flammable stores -- Fuel load in psf = 20 x height of deck

UENTILATION: 445 cu ft/min EXCHANGE TIME: 10.0 min.

UENT AREA: 175 sq.in. UENT HEIGHT: 90 in.

FIRE STARTED DUE TO: | I FRI A M Time

Fire Origin | 30 6 0 50

Thar Failure | 20 6 0 40

Dbar Failure | 10 * 0 0

* calculated as (100 ~ % Heat Release)/100 X FRI Time or 2 min., whichever is greater.

DETECTION:

Manual:

Occupied 5% of time in port and 5% of time at sea.

Automatic:

Rate of temperature rise detection system (RR)

Photo electric smoke detection system (P)

AUTOMATED FIRE PROTECTION SYSTEMS:

MANUAL FIRE FIGHTING EQUIPMENT:

Compartment: 2-4-0-A STOREROOM

	riers Compts ID and Name)	Mat ID	D/H	Area- sq.ft.	Tbar	Dbar	%heat rel
2-014-0-W	PEAK TANK	ผ6	0	96.3	10	100	5
2-014-0-W	PEAK TANK	ผ6	0	96.3	10	100	5
2-22-0-A	STOREROOM	ผ2	0	183.6	25	40	30
2-22-0-A	STOREROOM	ผ2	0	183.6	25	40	30
3-/ 0-A	STOREROOM FLAMMABLE LIQUIDS STORERO STOREROOM BOW BOOM INSTRUMENT ROOM	F3	1	86.2	25	300	5
1-028-0-K		C3	0	2.4	10	100	5
1-4-0-A		C3	0	395.8	10	100	5
1-4-2-Q		C3	0	96.5	10	100	5

Compartment: 2-22-0-A STOREROOM

USE: AS Storerooms

AREA: 1274 sq.ft. DECK HEIGHT: 9.0 ft. VOLUME: 11,470 cu.ft.

UNACCEPTABLE LOSS: Code 4 (2 compartments of one type lost to fire) THRESHOLD FREQUENCY OF UNACCEPTABLE LOSS: 0.3300 per ship year

FREQUENCY OF ESTABLISHED BURNING: 0.0009

FUEL LOAD: 1,440,000 BTUs/sq.ft.

Boxes of flammable stores--Fuel load in psf = 20 x height of deck

VENTILATION: 1,147 cu ft/min EXCHANGE TIME: 10.0 min.

UENT AREA: 20 sq.in. UENT HEIGHT: 2 in.

FIRE	STARTED	DUE	TO :	1	 	I	FRI Time	A	М
F	ire Orig	in		١		30	8	70	40
	bar Fail			1	i	20	8	50	60
D	bar Fail	ure		ļ		10	*	10	0

* calculated as (100 - % Heat Release)/100 X FRI Time or 2 min., whichever is greater.

DETECTION:

Manual:

Occupied 5% of time in port and 5% of time at sea.

Automatic:

Rate of temperature rise detection system (RR) Photo electric smoke detection system (P)

FIRST AID FIRE PROTECTION:

1 Hand portable monoammonium phosphate fire extinguisher

AUTOMATED FIRE PROTECTION SYSTEMS:

1 Seawater sprinkler system - remotely activated

MANUAL FIRE FIGHTING EQUIPMENT:

Compartment: 2-22-0-A STOREROOM

Barri (Adjoining Co	ers mpts ID and Name)	Mat ID	D/H	Area- sq.ft.	Tbar	Dbar	%heat rel
2-4-0-A 2-4-0-A 2-49-0-AA 2-49-0-AA 2-49-1-A 3-22-0-A 3-4-0-A 1-22-0-Q 1-4-0-A 1-49-0-Q 1-49-1-LP	STOREROOM STOREROOM SCIENCE STORAGEUPPER CA SCIENCE STORAGEUPPER CA SEA BAG LOCKER STOREROOM STOREROOM ANCHOR WINDLASS MACHINERY STOREROOM FAN ROOM PASSAGE	W6 W2 F3 F3 C3 C3 C3	0 1 1 0 0 1 0 1	183.6 183.6 201.6 293.4 92.7 738.6 1.3 1264.8 5.8 1.3	25 25 10 10 25 25 25 10 10	40 100 100 40 300 300 100 100	30 30 5 5 30 5 5 5 5 5 5 5 5 5 5 5 5 5 5
1-49-5-Q	REEFER MACHINERY ROOM	C3	0	3.3	10	100	5

COMPARTMENT FIRE SAFETY SUMMARY FOR POLAR ICEBREAKER REPLACEMENT

POLAR ICEBREAKER REPLACEMEN' (drawings dated 5/12/1987)

Compartment: 2-49-0-AA SCIENCE STORAGE--UPPER CARGO HOLD

Compartment: 2-45-0-nn Solence Stokhde--driek Chkdo nobb

USE: AA Cargo Holds

AREA: 3007 sq.ft. DECK HEIGHT: 9.0 ft. UOLUME: 27,069 cu.ft.

UNACCEPTABLE LOSS: Code 3 (Full compartment lost to fire)

THRESHOLD FREQUENCY OF UNACCEPTABLE LOSS: 0.1000 per ship year

FREQUENCY OF ESTABLISHED BURNING: 0.0009

FUEL LOAD: 1,800,000 BTUs/sq.ft.

Loaded cardboard boxes--Fuel load in psf = 25 x height of deck.

UENTILATION: 2,706 cu ft/min EXCHANGE TIME: 10.0 min.

UENT AREA: 100 sq.in. UENT HEIGHT: 20 in.

FIRE STARTED DUE TO:	1	I	FRI Time	A	М
Fire Origin		30	13	70	40
Thar Failure	ŧ	20	13	50	60
Dhar Failure	ı	1.0	+	1.0	n

* calculated as (100 - % Heat Release)/100 X FRI Time or 2 min., whichever is greater.

DETECTION:

Manual:

Occupied 5% of time in port and 10% of time at sea.

Automatic:

Rate of temperature rise detection system (RR) Photo electric smoke detection system (P)

FIRST AID FIRE PROTECTION:

- 2 Hand portable monoammonium phosphate fire extinguisher
- 1 Hand portable carbon dioxide fire extinguisher

AUTOMATED FIRE PROTECTION SYSTEMS:

1 Seawater sprinkler system - remotely activated

MANUAL FIRE FIGHTING EQUIPMENT:

- 2 1 1/2" Seawater hand line with "all purpose nozzle" 100 ft.
- 1 1 1/2" AFFF (3%) hand line with SFL variable nozzle 100 ft.

Compartment: 2-49-0-AA SCIENCE STORAGE--UPPER CARGO HOLD

Compar chart.	Z-43-6-FM SOILIOL			-OIIER OF	indo ii		
Barr (Adjoining C	iers compts ID and Name)	Mat ID	D/H	Area- sq.ft.		Dbar	%heat rel
2-100-0-LP	PASSAGE	₩6	1	36.0			5
2-100-0-LP	PASSAGE	₩6	1	72.0	10		5
2-100-1-L	CREW BERTHING	W6	0	144.0	10		5
2-100-2-L	CREW BERTHING	₩6	0	153.0			5
2-100-3-A	GEAR LOCKER	ω6	0	36.0			5
2-22-0-A	STOREROOM	₩6	1	201.6			5
	STOREROOM	₩6	0	293.4			5
2-49-1-A		₩6	1	1 36 .8		100	5
	SMALL ARMS & DEM MAG	₩6	1	90.9		100	5
	ENGINEERING STOREROOM	₩6	1	3 26 .7		100	5
2-65-2-C				134.1	10	100	5
2-65-2-C		W6	0	326. <i>7</i>	10	100	5
2-95-2-Q	FWD IC/GYRO ROOM	₩6	0	49.5	10	100	5
2-95-2-Q	FWD IC/GYRO ROOM	₩6	0	49.5	10	100	5
2-9 5- 2-Q	FWD IC/GYRO ROOM	₩6	1	63.0	10	100	5
3-22-0-A	STOREROOM	F3	0	1.0	25	300	5
3-46-1-V	UOID SPACE	F3	0	596.6	25	300	5
3-46-2-V	UOID SPACE	F3	0	672.0	25	300	5
3-49-0-AA	CARGO HOLD	F3	1	15 0 9.5	25	300	5
1-49-0-Q	FAN ROOM	C3	0	234.9	10	100	5
1-49-1-LP	PASSAGE	C3	0	372.3	10	100	5
1-49-2-LP		C3	1	532.2	10	100	5
1-49-3-A	FROZEN STOREROOM NO.1	C3	0	171.5	10	100	5
1-49-4-A	STOREROOM	C3	0	486.5	10	100	5
1-49-5-Q	REEFER MACHINERY ROOM	C3	0	7 0.9	10	100	5
1-52-0-LP	PASSAGE	C3	1	465.5	10	100	5
1-61-1-A	THAW STOREROOM	¢3	0	112.6	10	100	5
1-61-3-A	CHILL STOREROOM	C3	0	70.3	10	100	5
1-64-2-A	DRY PROUISION STOREROOM	C3	0	276.5	10	100	5
1-81-1-A	FROZEN STOREROOM NO.2	C3	0	211.0	10	100	5
	COMMISSARY OFFICE	C3	0	9.0	10	100	5

Compartment: 2-49-1-A SEA BAG LOCKER

USE: AG Small Storage Spaces -- Gear Lockers

AREA: 168 sq.ft. DECK HEIGHT: 9.0 ft. VOLUME: 1,512 cu.ft.

UNACCEPTABLE LOSS: Code 6 (4 compartments of one type lost to fire) THRESHOLD FREQUENCY OF UNACCEPTABLE LOSS: 1.0000 per ship year

FREQUENCY OF ESTABLISHED BURNING: 0.0009

FUEL LOAD: 80,000 BTUs/sq.ft.

UENTILATION: 151 cu ft/min EXCHANGE TIME: 10.0 min.

UENT AREA: 10 sq.in. UENT HEIGHT: 1 in.

* calculated as $(100 - % Heat Release)/100 \times FRI Time or 2 min., whichever is greater.$

DETECTION:

Manual:

Occupied 5% of time in port and 10% of time at sea. Automatic:

AUTOMATED FIRE PROTECTION SYSTEMS:

MANUAL FIRE FIGHTING EQUIPMENT:

Compartment: 2-49-1-A SEA BAG LOCKER

	iers Compts ID and Name)	Mat ID	D∕H	Area- sq.ft.	Tbar	Dbar	%heat rel
2-22-0-A	STOREROOM	W2	0	92.7	25	40	30
2-49-0-AA	SCIENCE STORAGE UPPER CA	W6	1	136.8	10	100	5
2-61-1-M	SMALL ARMS & DEM MAG	W2	0	119.7	25	40	30
3-46-1-U	UOID SPACE	F3	0	28.2	25	300	5
1-49-3-A	FROZEN STOREROOM NO.1	C3	0	24.3	10	100	5
1-49-5-Q	REEFER MACHINERY ROOM	C3	0	143.7	10	100	5

Compartment: 2-61-1-M SMALL ARMS & DEM MAG

USE: M Ammunition (stowages and handling)

AREA: 133 sq.ft. DECK HEIGHT: 9.0 ft. VOLUME: 1,203 cq.ft.

UNACCEPTABLE LOSS: Code 3 (Full compartment lost to fire)

THRESHOLD FREQUENCY OF UNACCEPTABLE LOSS: 0.3300 per ship year

FREQUENCY OF ESTABLISHED BURNING: 0.0001

FUEL LOAD: 3,200,000 BTUs/sq.ft.

UENTILATION: 300 cu ft/min EXCHANGE TIME: UENT AREA: 10 sq.in. UENT HEIGHT: 1 in.

FIRE STARTED DUE TO: I FRI A 1 1 Time 1 5 3 90 0 1 25 3 40 0 Fire Origin 25 3 40 Thar Failure Dhar Failure * 8 0 8

* calculated as (100 - % Heat Release)/100 X FRI Time or 2 min., whichever is greater.

DETECTION:

Manual:

Occupied 0% of time in port and 0% of time at sea.

Automatic:

FIRST AID FIRE PROTECTION:

AUTOMATED FIRE PROTECTION SYSTEMS:

1 Seawater sprinkler system - remotely activated

MANUAL FIRE FIGHTING EQUIPMENT:

- 2 1 1/2" Seawater hand line with "all purpose nozzle" 100 ft.
- 1 1 1/2" AFFF (3%) hand line with SFL variable nozzle 50 ft.

Compartment: 2-61-1-M	SMALL ARMS & DEM MAG
-----------------------	----------------------

	iers Compts ID and Name)	Mat ID	D/H	Area- sq.ft.	Tbar	Dbar	%heat rel
2-49-0-AA	SCIENCE STORAGEUPPER C	A W6	1	90.9	10	100	5
2-49-1-A	SEA BAG LOCKER	W2	0	119.7	25	40	30
2-65-1-Q	ENGINEERING STOREROOM	W2	0	134.1	25	40	30
3-46-1-V	VOID SPACE	F3	0	41.6	25	30 0	5
1-49-3-A	FROZEN STOREROOM NO.1	C3	0	131.4	10	100	5
1-49-5-Q	REEFER MACHINERY ROOM	C3	0	2.3	10	100	5
-							

Compartment: 2-65-1-Q ENGINEERING STOREROOM

USE: AS Storerooms

AREA: 586 sq.ft. DECK HEIGHT: 9.0 ft. VOLUME: 5,278 cu.ft.

UNACCEPTABLE LOSS: Code 4 (2 compartments of one type lost to fire) THRESHOLD FREQUENCY OF UNACCEPTABLE LOSS: 0.3300 per ship year

FREQUENCY OF ESTABLISHED BURNING: 0.0009

FUEL LOAD: 120,000 BTUs/sq.ft.

UENTILATION: 754 cu ft/min EXCHANGE TIME: 7.0 min.

UENT AREA: 175 sq.in. UENT HEIGHT: 90 in.

* calculated as (100 - % Heat Release)/100 X FRI Time or 2 min., whichever is greater.

DETECTION:

Manual:

Occupied 25% of time in port and 50% of time at sea.

Automatic:

Rate of temperature rise detection system (RR) Photo electric smoke detection system (P)

FIRST AID FIRE PROTECTION:

1 Hand portable carbon dioxide fire extinguisher

AUTOMATED FIRE PROTECTION SYSTEMS:

MANUAL FIRE FIGHTING EQUIPMENT:

Compartment: 2-65-1-Q ENGINEERING STOREROOM

Barr (Adjoining C	iers ompts ID and Name)	Mat ID	D/H	Area- sq.ft.	Tbar	Dbar	%heat rel
2-100-5-A	STACK CHAIR LOCKER	W6	0	4 5 . 0	10	100	5
2-100-7-LL	CREW LOUNGE	W6	0	94.5	10	100	5
2-49-0-AA	SCIENCE STORAGEUPPER CA	W6	1	326.7	10	100	5
2-61-1-M	SMALL ARMS & DEM MAG	ω2	0	134.1	25	40	30
3-46-1-V	VOID SPACE	F3	0	338.4	25	300	5
1-49-1-LP	PASSAGE	C3	0	60.6	10	100	5
1-49-3-A	FROZEN STOREROOM NO.1	C3	0	78.8	10	10 0	5
1-49-7-U	UOID SPACE	C3	0	16.1	10	100	5
1-61-3-A	CHILL STOREROOM	C3	0	217.0	10	100	5
1-81-1-A	FROZEN STOREROOM NO.2	C3	0	212.8	10	100	5

Compartment: 2-65-2-C FORWARD REPAIR NO.3

USE: C Ship and fire control operating areas normally occupied.

AREA: 586 sq.ft. DECK HEIGHT: 9.0 ft. VOLUME: 5,278 cu.ft.

UNACCEPTABLE LOSS: Code 4 (2 compartments of one type lost to fire) THRESHOLD FREQUENCY OF UNACCEPTABLE LOSS: 0.3300 per ship year

FREQUENCY OF ESTABLISHED BURNING: 0.0012

FUEL LOAD: 32,000 BTUs/sq.ft.

UENTILATION: 1,055 cu ft/min EXCHANGE TIME: UENT AREA: 175 sq.in. UENT HEIGHT: 90 in. 5.0 min.

FIRE STARTED DUE TO: I I FRI - 1 Time 1 20 6 0 80 Fire Origin Thar Failure 1 15 6 0 70 Dbar Failure 5 0 i

 \star calculated as (100 - % Heat Release)/100 X FRI Time or 2 min., whichever is greater.

DETECTION:

Manual:

Occupied 5% of time in port and 10% of time at sea.

Automatic:

Rate of temperature rise detection system (RR) Photo electric smoke detection system (P)

FIRST AID FIRE PROTECTION:

1 Hand portable monoammonium phosphate fire extinguisher

AUTOMATED FIRE PROTECTION SYSTEMS:

MANUAL FIRE FIGHTING EQUIPMENT:

Compartment: 2-65-2-C FORWARD REPAIR NO.3

	riers Compts ID and Name)	Mat ID	D∕H	Area- sq.ft.	Tbar	Dbar	%heat rel
2-100-4-L 2-49-0-AA 2-49-0-AA 3-46-2-U 1-49-4-A 1-64-2-A 1-89-2-QO 1-89-4-A	CREW BERTHING SCIENCE STORAGEUPPER CA SCIENCE STORAGEUPPER CA UOID SPACE STOREROOM DRY PROVISION STOREROOM COMMISSARY OFFICE SODA STORAGE 1000 CASES		0 1 0 0 0 0	139.5 134.1 326.7 338.4 50.1 368.0 79.0 89.4	10 10 10 25 10 10	100 100 100 300 100 100	5555555

Compartment: 2-95-2-Q FWD IC/GYRO ROOM

USE: Q Areas usually unoccupied: engineering, electronics, galleys

AREA: 38 sq.ft. DECK HEIGHT: 9.0 ft. VOLUME: 346 cu.ft.

UNACCEPTABLE LOSS: Code 8 (All compartments of one type lost to fire) THRESHOLD FREQUENCY OF UNACCEPTABLE LOSS: 0.1000 per ship year

FREQUENCY OF ESTABLISHED BURNING: 0.0012

FUEL LOAD: 12,000 BTUs/sq.ft.

UENTILATION: 173 cu ft/min EXCHANGE TIME: 2.0 min.

UENT AREA: 10 sq.in. UENT HEIGHT: 1 in.

* calculated as (100 - Heat Release)/100 X FRI Time or 2 min., whichever is greater.

DETECTION:

Manual:

Occupied 25% of time in port and 50% of time at sea.

Automatic:

Ionization smoke detection system (I)
Photo electric smoke detection system (P)

AUTOMATED FIRE PROTECTION SYSTEMS:

MANUAL FIRE FIGHTING EQUIPMENT:

Compartment: 2-95-2-Q FWD IC/GYRO ROOM

	iers Compts ID and Name)	Mat ID	D/H	Area- sq.ft.	Tbar	Dbar	%heat rel
2-100-2-L 2-49-0-AA 2-49-0-AA	CREW BERTHING SCIENCE STORAGEUPPER O SCIENCE STORAGEUPPER	CA W6	0	63.0 49. 5 49.5	10 10 10	100 100 100	5 5 5
2-49-0-AA 3-49-0-AA 1-52-0-LP	SCIENCE STORAGEUPPER (CARGO HOLD PASSAGE	CA W6 F3 C3	1 0 0	63.0 38.5 38.5	10 25 10	100 300 100	5 5 5

Compartment: 2-100-0-LP PASSAGE

USE: LP Passageways

AREA: 969 sq.ft. DECK HEIGHT: 9.0 ft. VOLUME: 8,724 cu.ft.

UNACCEPTABLE LOSS: Code 8 (All compartments of one type lost to fire)

THRESHOLD FREQUENCY OF UNACCEPTABLE LOSS: 0.1000 per ship year

FREQUENCY OF ESTABLISHED BURNING: 0.0001

FUEL LOAD: 3,200 BTUs/sq.ft.

Paint, cable insulation laminate on blkhds-no dropped ceiling

UENTILATION: 1,744 cu ft/min EXCHANGE TIME: 5.0 min.

UENT AREA: 2625 sq.in. UENT HEIGHT: 12 in.

FIRE STARTED DUE TO:	 	I	FRI Time	A	M
Fire Origin Thar Failure		95 80	20 20	0	40 60
Dbar Failure	i	40	*	0	0

* calculated as (100 - % Heat Release)/100 X FRI Time or 2 min., whichever is greater.

DETECTION:

Manual:

Occupied 30% of time in port and 50% of time at sea.

Automatic:

Photo electric smoke detection system (P)

AUTOMATED FIRE PROTECTION SYSTEMS:

MANUAL FIRE FIGHTING EQUIPMENT:

- 2 1 1/2" Seawater hand line with "all purpose nozzle" 100 ft.
- 2 1 1/2" AFFF (3%) hand line with SFL variable nozzle 100 ft.

Compartment: 2-100-0-LP PASSAGE

Barr			D/H		Tbar	Dbar	%heat
(Adjoining C	ompts ID and Name)	ID		sq.ft.			rel
2-100-1-L	CREW BERTHING	W2	0	18.0	25	40	30
2-100-1-L	CREW BERTHING	W 2	1	4 5.0	25	40	30
2-100-2-L	CREW BERTHING	W2	1	180.0	25	40	30
2-100-3-A	GEAR LOCKER	W2	1	49.5	25	40	30
2-100-4-L	CREW BERTHING	W2	1	180.0	25	40	30
2-100-5-A	STACK CHAIR LOCKER	W 2	0	36.0	25	40	30
2-100-7-LL	CREW LOUNGE	W2	2	270.0	25	40	30
2-105-1-TS	STAIRCASE	พร	1	85.5	5	80	5
2-121-3-L	CREW BERTHING	ພ2	1	1 7 3.7	2 5	40	30
2-121-3-L	CREW BERTHING	W2	0	198.0	25	40	30
2-121-4-L	CREW BERTHING	W2	1	173.7	25	40	30
2-121-4-L	CREW BERTHING	W2	0	216.0	25	40	30
2-125-2-LW	WR WC & SHR	WЗ	0	90.0	2 5	60	25
2-130-2-Q0	EXO OFFICE	W2	1	135.0	25	40	30
2-134-1-LL	CREW STUDY	ω2	1	126.0	2 5	40	30
2-145-0-TU	UPTAKE 1	we	0	288.0	80	100	5
2-145-1-T	MACHINERY HOIST	ω5	1	54.0	5	80	5
2-145-1-T	MACHINERY HOIST	ω5	0	72.0	5	80	5
2-145-2-TS	STAIRCASE	ພ 5	0	18.0	5	80	5
2-1 45-2-TS	STAIRCASE	W5	0	54.0	5	80	5
2-145-2-TS	STAIRCASE	ພ 5	1	99.0	5	80	5
2-146-2-Q	ENGINEERING LOG & DAMAGE	W 2	1	146.7	25	40	30
2-148-1-Q	ATHLETIC GEAR LOCKER	W2	0	36.0	25	40	30
2-148-3-Q	WEIGHT ROOM & GYM	W2	1	83.7	25	40	30
2-154-1-A	STOREROOM	W2	1	70.2	25	40	30
2-157-2-A	GEAR LOCKER	W2	1	43.2	25	40	30
2-162-1-TS	STAIRCASE	₩6	0	9.0	10	100	5
2-162-2-LP	PASSAGE	₩6	1	72.0	10	100	5
2-162-3-LP	PASSAGE	ω6	1	45.0	10	100	5
2-49-0-AA	SCIENCE STORAGEUPPER CA	₩6	1	36.0	10	100	5
2-49-0-AA	SCIENCE STORAGEUPPER CA	W6	1	<i>7</i> 2.0	10	100	5
3-100-0-E	ENGINE ROOM NO.1	F3	0	662.8	25	300	5
3-100-1-F	OIL TANK	F3	0	108.0	25	30Ú	5
3-100-2-F	OIL TANK	F3	0	101.3	25	300	5
3-127-1-F	OIL TANK	F3	0	38.0	25	300	5
3-12 7-2-F	OIL TANK	F 3	0	38.0	25	300	5
3-145-1-V	UOID SPACE	F3	0	7.7	25	300	5
3-145-2-F	OIL TANK	F3	0	7.7	25	300	5 5 5 5 5 5
1-100-0-LP	PASSAGE	C3	0	1.0	10	100	5
1-100-1-TS	STAIRCASE	C3	0	29.0	10	100	5
1-100-2-LP	PASSAGE	C3	0	166.6	10	100	5
1-100-3-LP	PASSAGE	C3	0	245.2	10	100	5
1-100-4-LW	WR & SHR	C3	0	10.0	10	100	5
1-100-5-LL	CREW MESS	C3	0	122.6	10	100	5 5
1-100-6-Q	SHIP LIBRARY	C3	0	38.0	10	100	5
1-105-0-Q	GALLEY	C3	0	132.0	10	100	5 5
1-124-2-LL	CPO MESSROOM & LOUNGE	C3	0	74.6	10	100	5
1-132-1-Q	INCINERATOR ROOM	C3	0	124.0	10	100	5
1-138-1-T	DUMB WAITER	C3	0	8.0	10	100	5
1-145-0-TU	UPTAKE 1	C3	0	6.4	10	100	5
1-145-1-T	MACHINERY HOIST ROOM	C3	0	1.2	10	100	5
1-142-1-1	MACRIMERI HOTSI ROOM	~	•				5

Compartment: 2-100-1-L CREW BERTHING

USE: L8 Berthing Space for 8

AREA: 269 sq.ft. DECK HEIGHT: 9.0 ft. VOLUME: 2,423 cu.ft.

UNACCEPTABLE LOSS: Code 7 (5 compartments of one type lost to fire) THRESHOLD FREQUENCY OF UNACCEPTABLE LOSS: 0.1000 per ship year

FREQUENCY OF ESTABLISHED BURNING: 0.0008

FUEL LOAD: 38,025 BTUs/sq.ft.

No. of people x 160/compartment area

UENTILATION: 403 cu ft/min EXCHANGE TIME: 6.0 min.

VENT HEIGHT: 90 in. UENT AREA: 325 sq.in.

FIRE STARTED DUE TO: FRI Time 1 10 4 0 30 Fire Origin Thar Failure ı 5 4 0 50 Dbar Failure * D 0 0

* calculated as (100 - % Heat Release)/160 X FRI Time or 2 min., whichever is greater.

DETECTION:

Manual:

Occupied 5% of time in port and 20% of time at sea.

Automatic:

Ionization smoke detection system (I) Photo electric smoke detection system (P)

FIRST AID FIRE PROTECTION:

1 Hand portable monoammonium phosphate fire extinguisher

AUTOMATED FIRE PROTECTION SYSTEMS:

MANUAL FIRE FIGHTING EQUIPMENT:

Compartment: 2-100-1-L CREW BERTHING

Barrie (Adjoining Co	ers mpts ID and Name)		D/H	Area- sq.ft.	Tbar	Dbar	%heat rel
2-100-0-LP 2-100-0-LP 2-100-2-L 2-100-3-A 2-105-1-TS 2-105-1-TS 2-111-1-LW 2-111-1-LW 2-121-1-LW 2-121-3-L 2-49-0-AA	PASSAGE PASSAGE CREW BERTHING GEAR LOCKER STAIRCASE STAIRCASE WR WC & SHR WR WC & SHR WR WC & SHR CREW BERTHING SCIENCE STORAGEUPPER	W2 W2 W2 W2 W5 W5 W3 W3 W3	0 1 0 0 0 0 1 0	18.0 45.0 90.0 49.5 36.0 85.5 76.5 85.5 18.0 103.5	25 25 25 25 25 25 25 25 25	40 40 40 80 80 60 60	30 30 30 30 5 5 25 25 25
3-100-0-E 1-100-0-LP 1-105-0-Q 1-119-1-Q	ENGINE ROOM NO.1 PASSAGE GALLEY SCULLERY	F3 C3 C3	0 0 9	269.3 150.0 93.3 26.0	25 10 10 10	300 100 100 100	5 5 5 5

Compartment: 2-100-2-L CREW BERTHING

USE: L10 Berthing Space for 10

AREA: 375 sq.ft. DECK HEIGHT: 9.0 ft. VOLUME: 3,375 ca.ft.

UNACCEPTABLE LOSS: Code 7 (5 compartments of one type lost to fire) THRESHOLD FREQUENCY OF UNACCEPTABLE LOSS: 0.1000 per ship year

FREQUENCY OF ESTABLISHED BURNING: 0.0008

FUEL LOAD: 34,129 BTUs/sq.ft.

No. of people x 160/compartment area

UENTILATION: 562 cu ft/min EXCHANGE TIME: UENT AREA: 250 sq.in. UENT HEIGHT: 90 in. 6.0 min.

I FRI A FIRE STARTED DUE TO: Time l 10 4 0 30 Fire Origin 5 Thar Failure Ω 4 50 - 1 Dbar Failure n * O 0

> * calculated as (100 - % Heat Release)/100 X FRI Time or 2 min., whichever is greater.

DETECTION:

Manual:

Occupied 5% of time in port and 20% of time at sea.

Automatic:

Ionization smoke detection system (I) Photo electric smoke detection system (P)

FIRST AID FIRE PROTECTION:

1 Hand portable monoammonium phosphate fire extinguisher

AUTOMATED FIRE PROTECTION SYSTEMS:

MANUAL FIRE FIGHTING EQUIPMENT:

Compartment: 2-100-2-L CREW BERTHING

Barr (Adjoining C	iers ompts ID and Name)	Ma II		D/H	Area- sq.ft.	Thar	Dbar	%heat rel
2-100-0-LP	PASSAGE	ω2)	1	180.0	25	40	30
2-100-0-EF 2-100-1-L	CREW BERTHING	W2	_	Ď	90.0	25	40	30
2-111-2-LW	WR WC & SHR	W2 W3		0				
			-	Ū	90.0	25	60	25
2-111-2-LW	wr wc & shr	W3	3	1	94.5	25	60	25
2-121-4-L	CREW BERTHING	W2	2	0	121.5	25	40	30
2-49-0-AA	SCIENCE STORAGEUPPER	CA WE	3	0	153.0	10	100	5
2-95-2-Q	FWD IC/GYRO ROOM	We	3	0	63.0	10	100	5
3-100-0-E	ENGINE ROOM NO.1	F3	}	0	368.9	25	300	5
3-100-2-F	OIL TANK	F3	3	0	6.8	25	300	5
1-100-0-LP	PASSAGE	C3	}	0	115.1	10	100	5
1-100-2-LP	PASSAGE	C3	3	0	40.0	10	100	5
1-105-0-Q	GALLEY	C3	}	0	219.9	10	100	5

Compartment: 2-100-3-A GEAR LOCKER

USE: AG Small Storage Spaces -- Gear Lockers

AREA: 22 sq.ft. DECK HEIGHT: 9.0 ft. VOLUME: 198 cu.ft.

UNACCEPTABLE LOSS: Code 4 (2 compartments of one type lost to fire) THRESHOLD FREQUENCY OF UNACCEPTABLE LOSS: 1.0000 per ship year

FREQUENCY OF ESTABLISHED BURNING: 0.0009

FUEL LOAD: 1,080,000 BTUs/sq.ft.

Fuel load in psf = 15 x height of deck.

UENTILATION: 19 cu ft/min EXCHANGE TIME: 10.0 min.

UENT AREA: 10 sq.in. UENT HEIGHT: 1 in.

FIRE	STARTED	DUE	TO:	ł 1	I	FRI Time	A	М
1	ire Orig	in		 	 2 0	3	0	40
	Tbar Fai			- 1	10	3	0	30
1	Dbar Fail	lure		1	0	*	0	0

* calculated as (100 - % Heat Release)/100 X FRI Time or 2 min., whichever is greater.

DETECTION:

Manual:

Occupied 5% of time in port and 10% of time at sea.

Automatic:

Rate of temperature rise detection system (RR) Photo electric smoke detection system (P)

AUTOMATED FIRE PROTECTION SYSTEMS:

MANUAL FIRE FIGHTING EQUIPMENT:

Compartment: 2-100-3-A GEAR LOCKER

Barr (Adjoining C	iers ompts ID and Name)	Mat ID	D/H	Area- sq.ft.	Tbar	Dbar	%heat rel
2-100-0-LP 2-100-1-L	PASSAGE CREW BERTHING	₩2 ₩2	1	49 . 5 49 . 5	25 25	4 0 4 0	30 30
2-105-1-TS	STAIRCASE	พ5	0	36.0	5	80	5
2-49-0-AA	SCIENCE STORAGEUPPER CA	ω6	0	36 · 0	10	100	5
3-100-0-E	ENGINE ROOM NO.1	F3	0	22 .0	25	30 0	5
1-100-1-TS	STAIRCASE	C3	0	22.0	10	1 0 0	5

Compartment: 2-100-4-L CREW BERTHING

USE: L10 Berthing Space for 10

AREA: 402 sq.ft. DECK HEIGHT: 9.0 ft. VOLUME: 3,621 cq.ft.

UNACCEPTABLE LOSS: Code 7 (5 compartments of one type lost to fire) THRESHOLD FREQUENCY OF UNACCEPTABLE LOSS: 0.1000 per ship year

FREQUENCY OF ESTABLISHED BURNING: 0.0008

FUEL LOAD: 31,805 BTUs/sq.ft.

No. of people x 160/compartment area

UENTILATION: 603 cu ft/min EXCHANGE TIME: UENT AREA: 250 sq.in. UENT HEIGHT: 90 in. 6.0 min.

FIRE STARTED DUE TO: I I FRI A Time 1 10 4 0 30 Fire Origin Thar Failure 5 4 0 50 1 Dbar Failure * ٥ 1 0 a

* calculated as (100 - % Heat Release)/100 X FRI Time or 2 min., whichever is greater.

DETECTION:

Manual:

Occupied 5% of time in port and 20% of time at sea.

Automatic:

Ionization smoke detection system (I) Photo electric smoke detection system (P)

FIRST AID FIRE PROTECTION:

1 Hand portable monoammonium phosphate fire extinguisher

AUTOMATED FIRE PROTECTION SYSTEMS:

MANUAL FIRE FIGHTING EQUIPMENT:

FOR POLAR ICEBREAKER REPLACEMENT (drawings dated 5/12/87)

Compartment: 2-100-4-L CREW BERTHING

	iers compts ID and Name)	Mat ID	D∕H	Area- sq.ft.	Tbar	Dbar	%heat rel
2-100-0-LP	PASSAGE	W2	1	180.0	25	40	3 0
2-125-2-LW	WR WC & SHR	W3	0	90. 0	25	60	25
2-125-2-LW	wr wc & shr	ωз	1	90.0	2 5	60	25
2-130-2-QO	EXO OFFICE	W2	0	<i>7</i> 2.0	25	40	30
2-65-2-C	FORWARD REPAIR NO.3	W6	0	139.5	10	100	5
3-100-2-F	OIL TANK	F3	0	294.4	25	300	5
3-127-2-F	OIL TANK	F3	0	13.6	25	300	5
1-100-4-LW	WR & SHR	C3	0	16.0	10	100	5
1-100-6-Q	SHIP LIBRARY	C3	0	339.9	10	100	5
1-124-2-LL	CPO MESSROOM & LOUNGE	C3	0	46 . 5	10	100	5
			· - -				

Compartment: 2-100-5-A STACK CHAIR LOCKER

Small Storage Spaces -- Gear Lockers

20 sq.ft. DECK HEIGHT: 9.0 ft. VOLUME: 180 cq.ft. AREA:

UNACCEPTABLE LOSS: Code 8 (All compartments of one type lost to fire) THRESHOLD FREQUENCY OF UNACCEPTABLE LOSS: 1.0000 per ship year

FREQUENCY OF ESTABLISHED BURNING: 0.0009

16,000 BTUs/sq.ft. FUEL LOAD: Assumed Al or Steel Chairs.

UENTILATION: 18 cu ft/min EXCHANGE TIME:

UENT AREA: 10 sq.in. UENT HEIGHT: 1 in.

FIRE STARTED DUE TO:	l i	I	FRI Time	A	М
Fire Origin	1	50	4	0	40
Tbar Failure	1	40	4	0	30
Dbar Failure	i	30	*	O	0

* calculated as (100 - % Heat Release)/100 X FRI Time or 2 min., whichever is greater.

DETECTION:

Manual:

Occupied 5% of time in port and 10% of time at sea.

Automatic:

Rate of temperature rise detection system (RR) Photo electric smoke detection system (P)

AUTOMATED FIRE PROTECTION SYSTEMS:

MANUAL FIRE FIGHTING EQUIPMENT:

Compartment: 2-100-5-A STACK CHAIR LOCKER

	iers compts ID and Name)	Mat ID	D/H	Area- sq.ft.	Tbar	Dbar	%heat rel
2-100-0-LP 2-100-7-LL 2-100-7-LL 2-65-1-Q 3-100-1-F 1-100-5-LL	PASSAGE CREW LOUNGE CREW LOUNGE ENGINEERING STOREROOM OIL TANK CREW MESS	W2 W2 W6 F3 C3	0 0 1 0 0	36.0 36.0 45.0 45.0 20.0	25 25 25 10 25 10	40 40 40 100 300 100	30 30 30 5 5
			1				

Compartment: 2-100-7-LL CREW LOUNGE

USE: LL Lounge areas

AREA: 546 sq.ft. DECK HEIGHT: 9.0 ft. VOLUME: 4,917 cu.ft.

UNACCEPTABLE LOSS: Code 4 (2 compartments of one type lost to fire) THRESHOLD FREQUENCY OF UNACCEPTABLE LOSS: 0.1000 per ship year

FREQUENCY OF ESTABLISHED BURNING: 0.0006

FUEL LOAD: 24,800 BTUs/sq.ft.

From Lounge Burnout Rpt. 000278

VENTILATION: 1,229 cu ft/min EXCHANGE TIME: 4.0 min.

UENT AREA: 2000 sq.in. UENT HEIGHT: 70 in.

* calculated as (100 - % Heat Release)/100 X FRI Time or 2 min., whichever is greater.

DETECTION:

Manual:

Occupied 10% of time in port and 40% of time at sea.

Automatic:

Rate of temperature rise detection system (RR) Photo electric smoke detection system (P)

FIRST AID FIRE PROTECTION:

1 Hand portable monoammonium phosphate fire extinguisher

AUTOMATED FIRE PROTECTION SYSTEMS:

MANUAL FIRE FIGHTING EQUIPMENT:

BARRIER FIRE SAFETY SUMMARY FOR POLAR ICEBREAKER REPLACEMENT (drawings dated 5/12/87)

Compartment	: 2-100-7-LL CREW L	OUNGE					
-	riers Compts ID and Name)	Mat ID	D∕H	Area- sq.ft.	Tbar	Dbar	%heat rel
2-100-0-LP 2-100-5-A 2-100-5-A	PASSAGE STACK CHAIR LOCKER STACK CHAIR LOCKER	ພ2 ພ2 ພ2	2 0 1	270.0 36.0 45.0	25 25 25	40 40 40	30 30 30
2-134-1-LL 2-65-1-Q 3-100-1-F 3-127-1-F 1-100-5-LL	CREW STUDY ENGINEERING STOREROOM OIL TANK OIL TANK CREW MESS	W2 W6 F3 F3 C3	0 0 0 0	157.5 94.5 344.4 102.1 546.4	25 10 25 25 10	40 100 300 300 100	30 5 5 5 5

Compartment: 2-105-1-TS STAIRCASE

USE: TS Staircases

AREA: 38 sq.ft. DECK HEIGHT: 9.0 ft. UOLUME: 342 cu.ft.

UNACCEPTABLE LOSS: Code 8 (All compartments of one type lost to fire)

THRESHOLD FREQUENCY OF UNACCEPTABLE LOSS: 0.1000 per ship year

FREQUENCY OF ESTABLISHED BURNING: 0.0001

FUEL LOAD: 800 BTUs/sq.ft.
Paint-no carpet or laminate

UENTILATION: 68 cu ft/min EXCHANGE TIME: 5.0 min.

UENT AREA: 10 sq.in. UENT HEIGHT: 1 in.

Fire Origin | 100 999 0 30

Thar Failure | 100 999 0 40

Dbar Failure | 90 * 0 0

* calculated as (100 - % Heat Release)/100 × FRI Time or 2 min., whichever is greater.

DETECTION:

Manual:

Occupied 30% of time in port and 50% of time at sea.

Automatic:

AUTOMATED FIRE PROTECTION SYSTEMS:

MANUAL FIRE FIGHTING EQUIPMENT:

Compartment: 2-111-1-LW WR WC & SHR

*

USE: LW Wash room, water closet and shower areas

AREA: 80 sq.ft. DECK HEIGHT: 9.0 ft. VOLUME: 726 cu.ft.

UNACCEPTABLE LOSS: Code 8 (All compartments of one type lost to fire) THRESHOLD FREQUENCY OF UNACCEPTABLE LOSS: 0.1000 per ship year

FREQUENCY OF ESTABLISHED BURNING: 0.0002

FUEL LOAD: 4,000 BTUs/sq.ft.

UENTILATION: 181 cu ft/min EXCHANGE TIME: 4.0 min.

UENT AREA: 175 sq.in. UENT HEIGHT: 90 in.

FIRE STARTED DUE TO:	1	I	FRI Time	A	М	
Fire Origin	I	100	999	0	30	
Thar Failure	1	100	999	0	40	
Dbar Failure	1	35	*	0	0	
					Release)/100	×

FRI Time or 2 min., whichever is greater.

DETECTION:

Manual:

Occupied 5% of time in port and 15% of time at sea. Automatic:

AUTOMATED FIRE PROTECTION SYSTEMS:

MANUAL FIRE FIGHTING EQUIPMENT:

Compartment: 2-111-1-LW WR WC & SHR

	iers Compts ID and Name)	Mat ID	D/H	Area- sq.ft.	Tbar	Dbar	%heat rel
2-100-1-L 2-100-1-L 2-111-2-LW	CREW BERTHING CREW BERTHING WR WC & SHR	M3 M3 M3	1 0 0	76.5 85.5 85.5	25 25 25	60 60 60	25 25 25
2-121-1-LW 3-100-0-E	WR WC & SHR ENGINE ROOM NO.1	W3 F3 C3	0 0 0	76.5 80.7 80.7	25 25	60 300 100	25 5 5
1-105-0-Q	GALLEY	C 3	- - 1	8U./	10	100	ວ

Compartment: 2-111-2-LW WR WC & SHR

USE: LW Wash room, water closet and shower areas

AREA: 105 sq.ft. DECK HEIGHT: 9.0 ft. VOLUME: 945 cu.ft.

UNACCEPTABLE LOSS: Code 8 (All compartments of one type lost to fire)

THRESHOLD FREQUENCY OF UNACCEPTABLE LOSS: 0.1000 per ship year

FREQUENCY OF ESTABLISHED BURNING: 0.0002

FUEL LOAD: 4,000 BTUs/sq.ft.

VENTILATION: 236 cu ft/min EXCHANGE TIME: 4.0 min.

UENT AREA: 200 sq.in. UENT HEIGHT: 90 in.

I FIRE STARTED DUE TO: FRI - 1 Time Fire Origin 1 100 999 0 30 0 40 Thar Failure 1 100 999 Dbar Failure 35 0

* calculated as (100 - % Heat Release)/100 X FRI Time or 2 min., whichever is greater.

DETECTION:

Manual:

Occupied 5% of time in port and 15% of time at sea.

Automatic:

AUTOMATED FIRE PROTECTION SYSTEMS:

MANUAL FIRE FIGHTING EQUIPMENT:

Compartment: 2-111-2-LW WR WC & SHR

	iers compts ID and Name)	Mat ID	D/H	Area- sq.ft.	Tbar	Dbar	%heat rel
2-100-2-L	CREW BERTHING	W 3	0	90.0	25	60	25
2-100-2-L	CREW BERTHING	ผз	1	94.5	25	60	25
2-111-1-LW	wr wc & shr	ωз	0	85.5	25	60	25
2-121-2-LW	WR WC & SHR	ผ่3	0	94.5	25	60	25
3-100-0-E	ENGINE ROOM NO.1	F3	0	105.0	25	300	5
1-105-0-Q	GALLEY	C3	0	105.0	10	100	5
			1				

Compartment: 2-121-1-LW WR WC & SHR

USE: LW Wash room, water closet and shower areas

AREA: 105 sq.ft. DECK HEIGHT: 9.0 ft. VOLUME: 945 cu.ft.

UNACCEPTABLE LOSS: Code 8 (All compartments of one type lost to fire)

THRESHOLD FREQUENCY OF UNACCEPTABLE LOSS: 0.1000 per ship year

FREQUENCY OF ESTABLISHED BURNING: 0.0002

FUEL LOAD: 4,000 BTUs/sq.ft.

UENTILATION: 236 cu ft/min EXCHANGE TIME: 4.0 min.

UENT AREA: 200 sq.in. UENT HEIGHT: 90 in.

DETECTION:

Manual:

Occupied 5% of time in port and 15% of time at sea.

Automatic:

AUTOMATED FIRE PROTECTION SYSTEMS:

MANUAL FIRE FIGHTING EQUIPMENT:

10 100

5

BARRIER FIRE SAFETY SUMMARY FOR POLAR ICEBREAKER REPLACEMENT (drawings dated 5/12/87)

Compartment:	2-121-1-LW	WR (MC	&	SHR					
	iers compts ID and Name)		~		Mat ID	D∕H	Area- sq.ft.	Tbar	Dbar	%heat rel
2-100-1-L	CREW BERTHING				ωз	0	18.0	25	60	25
2-111-1-LW	WR WC & SHR				WЗ	0	76.5	25	60	25
2-121-2-LW	ur uc & Shr				ωз	0	90.0	25	60	25
2-121-3-L	CREW BERTHING				ωз	0	90.0	25	60	25
2-121-3-L	CREW BERTHING				ωз	1	94.5	25	60	25
3-100-0-E	ENGINE ROOM NO.1				F3	0	105.0	25	300	5
1-105-0-Q	GALLEY				C3	0	90.0	10	100	5

1-119-1-Q

SCULLERY

1

0

15.0

C3

Compartment: 2-121-2-LW WR WC & SHR

USE: LW Wash room, water closet and shower areas

AREA: 105 sq.ft. DECK HEIGHT: 9.0 ft. VOLUME: 945 cu.ft.

UNACCEPTABLE LOSS: Code 8 (All compartments of one type lost to fire)

THRESHOLD FREQUENCY OF UNACCEPTABLE LOSS: 0.1000 per ship year

FREQUENCY OF ESTABLISHED BURNING: 0.0002

FUEL LOAD: 4,000 BTUs/sq.ft.

UENTILATION: 236 cu ft/min EXCHANGE TIME: 4.0 min.

UENT AREA: 200 sq.in. UENT HEIGHT: 90 in.

FRI A FIRE STARTED DUE TO: 1 1 Time Fire Origin l 100 999 0 30 1 100 999 Thar Failure 40 0 35 Dbar Failure 0 0

* calculated as (100 - % Heat Release)/100 X FRI Time or 2 min., whichever is greater.

DETECTION:

Manual:

Occupied 5% of time in port and 15% of time at sea.

Automatic:

AUTOMATED FIRE PROTECTION SYSTEMS:

MANUAL FIRE FIGHTING EQUIPMENT:

 Compartment: 2-121-2-LW
 WR WC & SHR

 Barriers
 Mat D/H Area- Tour Dour Sheat (Adjoining Compts ID and Name)
 ID sq.ft.
 Tour Dour Sheat rel

 2-111-2-LW WR WC & SHR
 W3 0 94.5 25 60 25

 2-121-1-LW WR WC & SHR
 W3 0 90.0 25 60 25

 2-121-4-L CREW BERTHING
 W3 0 90.0 25 60 25

 2-121-4-L CREW BERTHING
 W3 1 94.5 25 60 25

 3-100-0-E ENGINE ROOM NO.1
 F3 0 105.0 25 300 5

 1-105-0-Q GALLEY
 C3 0 105.0 10 10 100 5

Compartment: 2-121-3-L CREW BERTHING

USE: L10 Berthing Space for 10

AREA: 319 sq.ft. DECK HEIGHT: 9.0 ft. VOLUME: 2,876 cu.ft.

UNACCEPTABLE LOSS: Code 7 (5 compartments of one type lost to fire) THRESHOLD FREQUENCY OF UNACCEPTABLE LOSS: 0.1000 per ship year

FREQUENCY OF ESTABLISHED BURNING: 0.0008

FUEL LOAD: 40,045 BTUs/sq.ft.

No. of people x 160/compartment area

UENTILATION: 479 cu ft/min EXCHANGE TIME: 6.0 min.

UENT AREA: 250 sq.in. UENT HEIGHT: 90 in.

FIRE STARTED DUE TO: l I FRI A Time _____ 1 10 4 0 30 Fire Origin Thar Failure 1 5 4 0 50 Dbar Failure * Ð 0 0

* calculated as (100 - % Heat Release)/100 X FRI Time or 2 min., whichever is greater.

DETECTION:

Manual:

Occupied 5% of time in port and 20% of time at sea.

Automatic:

Ionization smoke detection system (I)
Photo electric smoke detection system (P)

FIRST AID FIRE PROTECTION:

1 Hand portable monoammonium phosphate fire extinguisher

AUTOMATED FIRE PROTECTION SYSTEMS:

MANUAL FIRE FIGHTING EQUIPMENT:

Compartment: 2-121-3-L CREW BERTHING

	iers Compts ID and Name)	Mat ID	D/H	Area- sq.ft.	Tbar	Dbar	%heat rel
2-100-0-LP	PASSAGE	W2	1	173.7	25	40	30
2-100-0-LP	PASSAGE	W2	ō	198.0	25	40	30
2-100-1-L	CREW BERTHING	W2	0	103.5	25	40	30
2-121-1-LW	wr wc & shr	ผ3	0	90.0	25	60	25
2-121-1-LW	wr wc & shr	ผ3	1	94.5	25	60	25
2-121-4-L	CREW BERTHING	W2	0	83.7	25	40	30
3-100-0-E	ENGINE ROOM NO.1	F3	0	319.6	25	300	5
1-105-0-Q	GALLEY	C3	0	40.0	10	100	5
1-119-1-Q	SCULLERY	C3	0	141.0	10	100	5
1-132-1-Q	INCINERATOR ROOM	C3	0	131.4	10	100	5
1-138-1-T	DUMB WAITER	C3	0	7.2	10	100	5

Compartment: 2-121-4-L CREW BERTHING

USE: L10 Berthing Space for 10

AREA: 358 sq.ft. DECK HEIGHT: 9.0 ft. VOLUME: 3,223 cu.ft.

UNACCEPTABLE LOSS: Code 7 (5 compartments of one type lost to fire) THRESHOLD FREQUENCY OF UNACCEPTABLE LOSS: 0.1000 per ship year

FREQUENCY OF ESTABLISHED BURNING: 0.0008

FUEL LOAD: 35,730 BTUs/sq.ft.

No. of people x 160/compartment area

VENTILATION: 537 cu ft/min EXCHANGE TIME: 6.0 min.

UENT AREA: 250 sq.in. UENT HEIGHT: 90 in.

FIRE STARTED DUE TO:	ĺ	I	FRI Time	A	М
Fire Origin	1	10	4	0	30
Tbar Failure	1	5	4	Q	50
Dbar Failure	ł	0	*	0	0

* calculated as (100 - % Heat Release)/100 X FRI Time or 2 min., whichever is greater.

DETECTION:

Manual:

Occupied 5% of time in port and 20% of time at sea.

Automatic:

Ionization smoke detection system (I)
Photo electric smoke detection system (P)

FIRST AID FIRE PROTECTION:

1 Hand portable monoammonium phosphate fire extinguisher

AUTOMATED FIRE PROTECTION SYSTEMS:

MANUAL FIRE FIGHTING EQUIPMENT:

Compartment: 2-121-4-L CREW BERTHING

		. 					
	iers Compts ID and Name)	Mat ID	D∕H	Area- sq.ft.	Tbar	Dbar	%heat rel
	200000	(10	4	470 7	25-25	40	20
2-100-0-LP	Passage	W2	Ţ	1 <i>7</i> 3 . 7	25	40	30
2-100-0-LP	Passage	W2	0	216.0	25	40	30
2-100-2-L	CREW BERTHING	W2	0	121.5	25	40	30
2-121-2-LW	wr wc & shr	ω 3	0	90.0	25	60	25
2-121-2-LW	WR WC & SHR	ผ3	1	94.5	25	60	25
2-121-3-L	CREW BERTHING	W2	0	83.7	25	40	30
3-100-0-E	ENGINE ROOM NO.1	F3	0	358.2	25	300	5
1-100-2-LP	PASSAGE	C3	0	38.6	10	100	5
1-105-0-Q	GALLEY	¢3	0	319.6	10	100	5

Compartment: 2-125-2-LW WR WC & SHR

USE: LW Wash room, water closet and shower areas

AREA: 100 sq.ft. DECK HEIGHT: 9.0 ft. VOLUME: 900 cq.ft.

UNACCEPTABLE LOSS: Code 8 (All compartments of one type lost to fire)

THRESHOLD FREQUENCY OF UNACCEPTABLE LOSS: 0.1000 per ship year

FREQUENCY OF ESTABLISHED BURNING: 0.0002

FUEL LOAD: 4,000 BTUs/sq.ft.

UENTILATION: 225 cu ft/min EXCHANGE TIME: 4.0 min.

UENT AREA: 200 sq.in. UENT HEIGHT: 90 in.

* calculated as (100 - % Heat Release)/100 X FRI Time or 2 min., whichever is greater.

DETECTION:

Manual:

Occupied 5% of time in port and 15% of time at sea.

Automatic:

AUTOMATED FIRE PROTECTION SYSTEMS:

MANUAL FIRE FIGHTING EQUIPMENT:

Compartment: 2-125-2-LW WR WC & SHR

Barr (Adjoining C	iers ompts ID and Name)	Mat ID	D/H	Area- sq.ft.	Tbar	Dbar	%heat rel
2-100-0-LP 2-100-4-L 2-100-4-L 2-130-2-QO 3-100-2-F 3-127-2-F 1-100-6-Q 1-124-2-LL	PASSAGE CREW BERTHING CREW BERTHING EXO OFFICE OIL TANK OIL TANK SHIP LIBRARY CPO MESSROOM & LOUNGE	W3 W3 W3 F3 F3 C3	0 0 1 0 0 0	90.0 90.0 90.0 90.0 70.0 30.0 40.0	25 25 25 25 25 25 10	60 60 60 300 300 100	25 25 25 25 5 5 5

Compartment: 2-130-2-QO EXO OFFICE

USE: QO Offices

AREA: 270 sq.ft. DECK HEIGHT: 9.0 ft. VOLUME: 2,430 cu.ft.

UNACCEPTABLE LOSS: Code 8 (All compartments of one type lost to fire)

THRESHOLD FREQUENCY OF UNACCEPTABLE LOSS: 1.0000 per ship year

FREQUENCY OF ESTABLISHED BURNING: 0.0004

FUEL LOAD: 20,000 BTUs/sq.ft.

UENTILATION: 405 cu ft/min EXCHANGE TIME: 6.0 min

UENT AREA: 175 sq.in. UENT HEIGHT: 90 in.

FIRE	STARTED	DUE	TO:	 	Ι	FRI Time	A	M
1	Fire Ori	gin			 20	5	0	60
•	Tbar Fai	lure		1	15	5	0	40
1	Dhar Fai	lura		1	5	*	Ω	n

* calculated as (100 - % Heat Release)/100 X FRI Time or 2 min., whichever is greater.

DETECTION:

Manual:

Occupied 5% of time in port and 35% of time at sea.

Automatic:

Photo electric smoke detection system (P)

FIRST AID FIRE PROTECTION:

1 Hand portable monoammonium phosphate fire extinguisher

AUTOMATED FIRE PROTECTION SYSTEMS:

MANUAL FIRE FIGHTING EQUIPMENT:

Compartment: 2-130-2-QO EXO OFFICE

Barriers (Adjoining Compts	ID and Name)	Mat ID	D/H	Area- sq.ft.	Tbar	Dbar	%heat rel
2-100-4-L CREG	SAGE	พ2	1	135.0	25	40	30
	J BERTHING	พ2	0	72.0	25	40	30
	JC & SHR	พ3	0	90.0	25	60	25
3-127-2-F OIL	INEERING LOG & DAMAGE	W2	0	162.0	25	40	30
	TANK	F3	0	221.6	25	300	5
	MESSROOM & LOUNGE	C3	0	270.0	10	100	5

Compartment: 2-134-1-LL CREW STUDY

USE: LL Lounge areas

AREA: 244 sq.ft. DECK HEIGHT: 9.0 ft. VOLUME: 2,204 cu.ft.

UNACCEPTABLE LOSS: Code 4 (2 compartments of one type lost to fire) THRESHOLD FREQUENCY OF UNACCEPTABLE LOSS: 0.1000 per ship year

FREQUENCY OF ESTABLISHED BURNING: 0.0006

FUEL LOAD: 24,800 BTUs/sq.ft.

From Lounge Burnout Rpt. 000278

551 cu ft/min EXCHANGE TIME:
0 sq.in. UENT HEIGHT: 90 UENTILATION: 4.0 min.

UENT AREA: 200 sq.in. UENT HEIGHT: 90 in.

FIRE STARTED DUE TO:	1	I	FRI Time	A	M
Fire Origin		20	 5	0	30
Tbar Failure	1	15	5	0	40
Dbar Failure	ł	5	*	0	Ð

* calculated as (100 - % Heat Release)/100 X FRI Time or 2 min., whichever is greater.

DETECTION:

Manual:

Occupied 10% of time in port and 40% of time at sea.

Automatic:

Rate of temperature rise detection system (RR) Photo electric smoke detection system (P)

AUTOMATED FIRE PROTECTION SYSTEMS:

MANUAL FIRE FIGHTING EQUIPMENT:

Compartment: 2-134-1-LL CREW STUDY

- · · · ·	iers compts ID and Name)	Mat ID	D/H	Area- sq.ft.	Tbar	Dbar	%heat rel
2-100-0-LP 2-100-7-LL 2-148-1-Q 2-148-3-Q 3-127-1-F 3-145-1-U 1-100-5-LL	PASSAGE CREW LOUNGE ATHLETIC GEAR LOCKER WEIGHT ROOM & GYM OIL TANK VOID SPACE CREW MESS	W2 W2 W2 W2 F3 F3 C3	1 0 0 0 0	126.0 157.5 45.0 112.5 178.1 30.0 244.9	25 25 25 25 25 25 25	40 40 40 40 300 300	30 30 30 30 30 5 5

COMPARTMENT FIRE SAFETY SUMMARY FOR

POLAR ICEBREAKER REPLACEMENT (drawings dated 5/12/1987)

Compartment: 2-145-1-T MACHINERY HOIST

.

USE: T Elevators, dumb waiters

AREA: 48 sq.ft. DECK HEIGHT: 9.0 ft. VOLUME: 432 cu.ft.

UNACCEPTABLE LOSS: Code 8 (All compartments of one type lost to fire)

THRESHOLD FREQUENCY OF UNACCEPTABLE LOSS: 1.0000 per ship year

FREQUENCY OF ESTABLISHED BURNING: 0.0001

FUEL LOAD: 12,000 BTUs/sq.ft.

Accumulated dust and grease and cable insulation

VENTILATION: 216 cu ft/min EXCHANGE TIME: 2.8 min.

UENT AREA: 10 sq.in. UENT HEIGHT: 1 in.

* calculated as (100 - % Heat Release)/100 X FRI Time or 2 min., whichever is greater.

DETECTION:

Manual:

Occupied 5% of time in port and 5% of time at sea.

Automatic:

AUTOMATED FIRE PROTECTION SYSTEMS:

MANUAL FIRE FIGHTING EQUIPMENT:

Compartment: 2-145-1-T MACHINERY HOIST

Barr (Adjoining C	iers ompts ID and Name)	Mat ID	D/H	Area- sq.ft.	Tbar	Dbar	%heat rel
2-100-0-LP	Passage	W 5	1	54.0	5	80	5
2-100-0-LP	PASSAGE	ພ 5	0	72 .0	5	80	5
2-145-0-TU	UPTAKE 1	W8	0	72.0	80	100	5
2-154-1-A	STOREROOM	W5	0	54.0	5	80	5
3-100-0-E	ENGINE ROOM NO.1	F3	1	48.0	25	300	5
1-145-1-T	MACHINERY HOIST ROOM	C3	1	46.8	10	100	5
1-154-1-A	STOREROOM	C3	0	1.2	10	100	5

Compartment: 2-145-2-TS STAIRCASE

USE: TS Staircases

AREA: 66 sq.ft. DECK HEIGHT: 9.0 ft. VOLUME: 594 cu.ft.

UNACCEPTABLE LOSS: Code 8 (All compartments of one type lost to fire)

THRESHOLD FREQUENCY OF UNACCEPTABLE LOSS: 0.1000 per ship year

FREQUENCY OF ESTABLISHED BURNING: 0.0001

FUEL LOAD: 800 BTUs/sq.ft.

Paint-no carpet or laminate

UENTILATION: 118 cu ft/min EXCHANGE TIME: 5.0 min.

UENT AREA: 10 sq.in. UENT HEIGHT: 1 in.

* calculated as (100 - % Heat Release)/100 X FRI Time or 2 min., whichever is greater.

DETECTION:

Manual:

Occupied 30% of time in port and 50% of time at sea.

Automatic:

AUTOMATED FIRE PROTECTION SYSTEMS:

MANUAL FIRE FIGHTING EQUIPMENT:

Compartment: 2-145-2-TS STAIRCASE

Barr (Adjoining C	iers ompts ID and Name)	Mat ID	D/H	Area- sq.ft.	Tbar	Dbar	%heat rel
2-100-0-LP 2-100-0-LP 2-100-0-LP 2-145-0-TU 2-157-2-A 3-100-0-E 1-145-2-TS	PASSAGE PASSAGE PASSAGE UPTAKE 1 GEAR LOCKER ENGINE ROOM NO.1 STAIRCASE	W5 W5 W5 W8 W5 F3 C3	0 0 1 0 0 1 1	18.0 54.0 99.0 99.0 36.0 66.0	5 5 80 5 25 10	80 80 100 80 300	5 5 5 5 5 5 5
			3				

COMPARTMENT FIRE SAFETY SUMMARY FOR POLAR ICEBREAKER REPLACEMENT

(drawings dated 5/12/1987)

Compartment: 2-146-2-Q ENGINEERING LOG & DAMAGE CONTROL CENTER

USE: QO Offices

AREA: 293 sq.ft. DECK HEIGHT: 9.0 ft. VOLUME: 2,640 cq.ft.

UNACCEPTABLE LOSS: Code 8 (All compartments of one type lost to fire)

THRESHOLD FREQUENCY OF UNACCEPTABLE LOSS: 1.0000 per ship year

FREQUENCY OF ESTABLISHED BURNING: 0.0004

FUEL LOAD: 20,000 BTUs/sq.ft.

UENTILATION: 440 cu ft/min EXCHANGE TIME:

6.0 min.

UENT AREA: 175 sq.in. UENT 1

UENT HEIGHT: 90 in.

FIRE STARTED DUE TO:	I I FRI A M I Time
Fire Origin	1 20 5 0 60
Tbar Failure	1 15 5 0 40
Dbar Failure	15 * 0 0

* calculated as (100 - % Heat Release)/100 X FRI Time or 2 min., whichever is greater.

DETECTION:

Manual:

Occupied 5% of time in port and 35% of time at sea.

Automatic:

Photo electric smoke detection system (P)

FIRST AID FIRE PROTECTION:

1 Hand portable monoammonium phosphate fire extinguisher

AUTOMATED FIRE PROTECTION SYSTEMS:

MANUAL FIRE FIGHTING EQUIPMENT:

Compartment:	2-146-2-Q	ENGINEERING	LOG &	DAMAGE	CONTR	OL CE	NTER
	iers Compts ID and Name)	Mat ID	. D∕H	Area- sq.ft.	Tbar	Dbar	%heat rel
2-100-0-LP 2-130-2-QO 2-162-4-Q 3-127-2-F 3-145-2-F 1-124-2-LL	PASSAGE EXO OFFICE MACHINE SHOP OIL TANK OIL TANK CPO MESSROOM & LO	W2 W2 W6 F3 F3	1 0 0 0 0	146.7 162.0 162.0 15.0 229.5	25 25 10 25 25	40 40 100 300 300	30 30 5 5
1-124-2-LL	CEO WESSKOOM & FO	OUNGE C3	- - 1	293 . 4	10	100	5

Compartment: 2-148-1-Q ATHLETIC GEAR LOCKER

USE: AG Small Storage Spaces -- Gear Lockers

20 sq.ft. DECK HEIGHT: 9.0 ft. VOLUME: 180 cu.ft. AREA:

UNACCEPTABLE LOSS: Code 8 (All compartments of one type lost to fire) THRESHOLD FREQUENCY OF UNACCEPTABLE LOSS: 1.0000 per ship year

FREQUENCY OF ESTABLISHED BURNING: 0.0009

FUEL LOAD: 16,000 BTUs/sq.ft.

18 cu ft/min EXCHANGE TIME: 10.0 min. 0 sq.in. UENT HEIGHT: 1 in. UENTILATION:

VENT AREA: 10 sq.in.

FIRE STARTED DUE TO:	 	I	FRI Time	A	М
Fire Origin	ļ	30	3	0	40
Thar Failure	1	20	3	0	30
Dbar Failure	•	10	*	0	0

* calculated as (100 - % Heat Release)/100 X FRI Time or 2 min., whichever is greater.

DETECTION:

Manual:

Occupied 5% of time in port and 15% of time at sea.

Automatic:

Photo electric smoke detection system (P)

AUTOMATED FIRE PROTECTION SYSTEMS:

MANUAL FIRE FIGHTING EQUIPMENT:

Compartment: 2-148-1-Q ATHLETIC GEAR LOCKER

Barr (Adjoining C	iers ompts ID and Name)	Mat ID	D∕H	Area- sq.ft.	Tbar	Dbar	%heat rel
2-100-0-LP	PASSAGE	W 2	0	36.0	25	40	30
2-134-1-LL	CREW STUDY	พ2 W2	Ô	45.0	25	40	30
2-148-3-Q	WEIGHT ROOM & GYM	W2	Ō	36.0	25	40	30
2-148-3-Q	WEIGHT ROOM & GYM	W2	1	45.0	25	40	30
3-145-1-Ü	VOID SPACE	F3	0	20.0	25	300	5
1-100-5-LL	CREW MESS	C3	0	20.0	10	100	5
			1				

Compartment: 2-148-3-Q WEIGHT ROOM & GYM

USE: Q Areas usually unoccupied: engineering, electronics, galleys

AREA: 216 sq.ft. DECK HEIGHT: 9.0 ft. VOLUME: 1,944 cu.ft.

UNACCEPTABLE LOSS: Code 8 (All compartments of one type lost to fire)

THRESHOLD FREQUENCY OF UNACCEPTABLE LOSS: 1.0000 per ship year

FREQUENCY OF ESTABLISHED BURNING: 0.0006

FUEL LOAD: 16,000 BTUs/sq.ft.

UENTILATION: 388 cu ft/min EXCHANGE TIME: 5.0 min.

UENT AREA: 225 sq.in. UENT HEIGHT: 90 in.

FIRE STARTED DUE TO:	1	I	FRI Time	A	М
Fire Origin	1	30	5	0	20
Tbar Failure	ſ	20	5	0	40
Dbar Failure	ı	10	*	0	0

* calculated as (100 - % Heat Release)/100 X FRI Time or 2 min., whichever is greater.

DETECTION:

Manual:

Occupied 5% of time in port and 20% of time at sea.

Automatic:

Photo electric smoke detection system (P)

AUTOMATED FIRE PROTECTION SYSTEMS:

MANUAL FIRE FIGHTING EQUIPMENT:

Compartment: 2-148-3-Q WEIGHT ROOM & GYM

Barr (Adjoining C	iers ompts ID and Name)	Mat ID	D∕H	Area- sq.ft.	Tbar	Dbar	%heat rel
2-100-0-LP 2-134-1-LL	PASSAGE CREW STUDY	W2 W2	1 0	83.7 112.5	25 25	40 40	30 30
2-148-1-Q	ATHLETIC GEAR LOCKER	W2	Ō	36.0	25	40	3 0
2-148-1-Q	athletic gear locker	W2	1	45.0	25	40	30
2-162-5-Q	SHIP LAUNDRY	we	0	162.0	10	100	5
3-145-1-U	VOID SPACE	F3	0	179.5	25	300	5
1-100-5-LL	CREW MESS	C3	0	216.1	10	100	5

Compartment: 2-154-1-A STOREROOM

USE: AS Storerooms

46 sq.ft. DECK HEIGHT: 9.0 ft. VOLUME: AREA: 421 cu.ft.

UNACCEPTABLE LOSS: Code 4 (2 compartments of one type lost to fire) THRESHOLD FREQUENCY OF UNACCEPTABLE LOSS: 0.3300 per ship year

FREQUENCY OF ESTABLISHED BURNING: 0.0009

FUEL LOAD: 1,440,000 BTUs/sq.ft.

Boxes of flammable stores -- Fuel load in psf = 20 x height of deck

42 cu ft/min UENTILATION: EXCHANGE TIME: 10.0 min.

UENT AREA: 10 sq.in. UENT HEIGHT: 1 in.

FI	IRE STARTED DUE TO:	1	I	FRI Time	A	М
	Fire Origin	1	30	3	0	30
	Tbar Failure	ı	20	3	0	20
ı	Dbar Failure	1	10	*	0	0

* calculated as (100 - % Heat Release)/100 X FRI Time or 2 min., whichever is greater.

DETECTION:

Manual:

Occupied 5% of time in port and 5% of time at sea.

Automatic:

Rate of temperature rise detection system (RR) Photo electric smoke detection system (P)

AUTOMATED FIRE PROTECTION SYSTEMS:

MANUAL FIRE FIGHTING EQUIPMENT:

Compartment: 2-154-1-A STOREROOM

	iers Compts ID and Name)	Mat ID	D/H	Area- sq.ft.	Tbar	Dbar	%heat rel
2-100-0-LP	PASSAGE	W2	1	70.2	25	40	30
2-145-0-TU	UPTAKE 1	ଧ 8	0	7 0.2	80	100	5
2-145-1-T	MACHINERY HOIST	ω 5	0	54.0	5	80	5
2-162-1-TS	STAIRCASE	W6	0	54.0	10	100	5
3-100-0-E	ENGINE ROOM NO.1	F3	0	46.8	25	300	5
1-154-1-A	STOREROOM	C3	0	46 . 8	10	100	5
			1				

Compartment: 2-157-2-A GEAR LOCKER

USE: AG Small Storage Spaces -- Gear Lockers

AREA: 19 sq.ft. DECK HEIGHT: 9.0 ft. VOLUME: 172 cu.ft.

UNACCEPTABLE LOSS: Code 4 (2 compartments of one type lost to fire) THRESHOLD FREQUENCY OF UNACCEPTABLE LOSS: 1.0000 per ship year

FREQUENCY OF ESTABLISHED BURNING: 0.0009

FUEL LOAD: 1,080,000 BTUs/sq.ft.

Fuel load in psf = 15 x height of deck.

UENTILATION: 17 cu ft/min EXCHANGE TIME: 10.0 min. UENT AREA: 10 sq.in. UENT HEIGHT: 1 in.

FIRE STARTED DUE TO: l I FRI 1 Time Fire Origin 1 20 3 0 40 Thar Failure 1 10 3 0 30 Dbar Failure 0 * D 0

* calculated as (100 - % Heat Release)/100 X FRI Time or 2 min., whichever is greater.

DETECTION:

Manual:

Occupied 5% of time in port and 10% of time at sea.

Automatic:

Rate of temperature rise detection system (RR) Photo electric smoke detection system (P)

AUTOMATED FIRE PROTECTION SYSTEMS:

MANUAL FIRE FIGHTING EQUIPMENT:

Compartment: 2-157-2-A GEAR LOCKER

	iers compts ID and Name)	Mat ID	D∕H	Area- sq.ft.	Tbar	Dbar	%heat rel
2-100-0-LP	PASSAGE	W 2	1	43.2	25	40	30
2-145-0-TU	UPTAKE 1	we	0	43.2	80	100	5
2-145-2-TS	STAIRCASE	W 5	0	36.0	5	80	5
2-162-2-LP	PASSAGE	ωe	0	36.0	10	100	5
3-100-0-E	ENGINE ROOM NO.1	F3	0	19.2	25	300	5
1-145-2-TS	STAIRCASE	C3	0	19.2	10	100	5
			1				

Compartment: 2-162-1-TS STAIRCASE

USE: TS Staircases

AREA: 112 sq.ft. DECK HEIGHT: 9.0 ft. UOLUME: 1,008 cu.ft.

UNACCEPTABLE LOSS: Code 8 (All compartments of one type lost to fire)

THRESHOLD FREQUENCY OF UNACCEPTABLE LOSS: 0.1000 per ship year

FREQUENCY OF ESTABLISHED BURNING: 0.0001

FUEL LOAD: 800 BTUs/sq.ft.

Paint-no carpet or laminate

UENTILATION: 201 cu ft/min EXCHANGE TIME: 5.0 min.

UENT AREA: 10 sq.in. UENT HEIGHT: 1 in.

FIRE STARTED DUE TO: | I FRI A M | Time | | 100 999 0 30 | Thar Failure | 100 999 0 40 | Dhar Failure | 90 * 0 0

* calculated as (100 - % Heat Release)/100 X FRI Time or 2 min., whichever is greater.

DETECTION:

Manual:

Occupied 30% of time in port and 50% of time at sea. Automatic:

AUTOMATED FIRE PROTECTION SYSTEMS:

MANUAL FIRE FIGHTING EQUIPMENT:

Compartment: 2-162-1-TS STAIRCASE

Mat ID	D/H	Area- sq.ft.	Tbar	Dbar	%heat rel
W6 W8 W5 W6 F3 C3	0 0 0 1 0 1	9.0 54.0 144.0 144.0 63.0 112.0 96.0 16.0	10 10 80 5 10 25 10	100 100 100 80 100 300 100	55555555
	U6 U6 U8 U5 U6 F3 C3	W6 0 W6 0 W8 0 W5 1 W6 0 F3 1 C3 1	ID sq.ft. W6 0 9.0 W6 0 54.0 W8 0 144.0 W5 1 144.0 W6 0 63.0 F3 1 112.0 C3 1 96.0	ID sq.ft. W6 0 9.0 10 W6 0 54.0 10 W8 0 144.0 80 W5 1 144.0 5 W6 0 63.0 10 F3 1 112.0 25 C3 1 96.0 10	ID sq.ft. W6 0 9.0 10 100 W6 0 54.0 10 100 W8 0 144.0 80 100 W5 1 144.0 5 80 W6 0 63.0 10 100 F3 1 112.0 25 300 C3 1 96.0 10 100

Compartment: 2-162-2-LP PASSAGE

Zero strength barrier adjacent.

USE: LP Passageways

AREA: 397 sq.ft. DECK HEIGHT: 9.0 ft. VOLUME: 3,580 cu.ft.

UNACCEPTABLE LOSS: Code 8 (All compartments of one type lost to fire) THRESHOLD FREQUENCY OF UNACCEPTABLE LOSS: 0.1000 per ship year

FREQUENCY OF ESTABLISHED BURNING: 0.0001

FUEL LOAD: 3,200 BTUs/sq.ft.

Paint, cable insulation laminate on blkhds-no dropped ceiling

VENTILATION: 716 cu ft/min EXCHANGE TIME: 5.0 min.

UENT AREA: 1125 sq.in. UENT HEIGHT: 12 in.

FIRE STARTED DUE TO:	1 1	I	FRI Time	A	М
Fire Origin	1	95	20	0	40
Thar Failure	ļ	80	20	0	60
Dbar Failure	i	40	*	O	n

* calculated as (100 - % Heat Release)/100 X FRI Time or 2 min., whichever is greater.

DETECTION:

Manual:

Occupied 30% of time in port and 50% of time at sea.

Automatic:

Photo electric smoke detection system (P)

AUTOMATED FIRE PROTECTION SYSTEMS:

MANUAL FIRE FIGHTING EQUIPMENT:

- 2 1 1/2" Seawater hand line with "all purpose nozzle" 100 ft.
- 1 1 1/2" AFFF (3%) hand line with SFL variable nozzle 50 ft.

Compartment: 2-162-2-LP PASSAGE

Barr		Mat ID	D∕H	Area- sq.ft.	Tbar	Dbar	%heat rel
2-100-0-LP	PASSAGE	ω6	1	<i>7</i> 2.0	10	100	5
2-157-2-A	GEAR LOCKER	W6	Ō	36.0	10	100	5
2-162-0-TU	UPTAKE 2	W8	0	69.3			5
2-162-3-LP	PASSAGE	ωο	0	27.9		0	100
2-162-4-0	MACHINE SHOP	W 2	2	303.3	25	40	30
2-169-2-T	MACHINERY HOIST	ω 5	1	54.0	5	80	5
2-169-2-T	MACHINERY HOIST	W 5	0	74.7	5	80	5
2-178-2-E	BOILER ROOM	₩6	0	18.0	10	100	5
2-178-2-E	BOILER ROOM	W6	0	216.0	10	100	5
2-178-2-E	BOILER ROOM	W6	G	262.8	10	100	5
2-195-2-Q	FIREFIGHTING EQPT ROOM	W2	1	248.4	25	40	30
2-210-0-Q	GRAUIMETER ROOM	W2	0	63.0	25	40	30
2-210-01-Q	COMPUTER/NAU LAB	W2	1	81.0	25	40	30
2-210-2-TS	STAIRCASE	ພ5	0	72.0	5	80	5
2-210-2-TS	STAIRCASE	W5	1	117.0	5	80	5
2-223-2-LP	PASSAGE	₩6	1	36.0	10	100	5
3-162-0-E	ENGINE ROOM NO.2	F3	0	397.8	25	300	5
1-162-2-LP	PASSAGE	C3	0	259.4	10	100	5
1-178-2-E	BOILER ROOM UPPER LEVEL	C3	0	2.4	10	100	5
1-207-2-LP	PASSAG E	C3	0	113.6	10	100	5
1-217-2-A	C.G. LOCKER	C3	0	22.4	10	100	5

Compartment: 2-162-3-LP PASSAGE

Zero strength barrier adjacent.

USE: LP Passageways

AREA: 335 sq.ft. DECK HEIGHT: 9.0 ft. UOLUME: 3,020 cu.ft.

UNACCEPTABLE LOSS: Code 8 (All compartments of one type lost to fire)

THRESHOLD FREQUENCY OF UNACCEPTABLE LOSS: 0.1000 per ship year

FREQUENCY OF ESTABLISHED BURNING: 0.0001

FUEL LOAD: 3,200 BTUs/sq.ft.

Paint, cable insulation laminate on blkhds-no dropped ceiling

UENTILATION: 604 cu ft/min EXCHANGE TIME: 5.0 min.

UENT AREA: 1375 sq.in. UENT HEIGHT: 12 in.

FIRE STARTED DUE TO:	i I	FRI Time	A	М
Fire Origin	1 9	5 20	0	40
Tbar Failure	1 8	0 20	0	60
Dbar Failure	1 4	0 *	0	0

* calculated as (100 - % Heat Release)/100 X FRI Time or 2 min., whichever is greater.

DETECTION:

Manual:

Occupied 30% of time in port and 50% of time at sea.

Automatic:

Photo electric smoke detection system (P)

AUTOMATED FIRE PROTECTION SYSTEMS:

MANUAL FIRE FIGHTING EQUIPMENT:

- 2 1 1/2" Seawater hand line with "all purpose nozzle" 100 ft.
- 1 1 1/2" AFFF (3%) hand line with SFL variable nozzle 50 ft.

Compartment: 2-162-3-LP PASSAGE

Barr (Adjoining C	iers ompts ID and Name)	Mat ID	D/H	Area- sq.ft.	Tbar	Dbar	%heat rel
2-100-0-LP	PASSAGE	ω 6	1	45.0	10	100	5
2-162-1- T S 2-162-2-LP	STAIRCASE PASSAGE	ພ 5 ພວ	1 0	144.0 27.9	5 0	8 0 0	5 100
2-162-5-Q	SHIP LAUNDRY	ω2	1	159.3	25	40	30
2-178-1-E	BOILER ROOM	₩6	0	9.0	10	100	5
2-178-1-E	BOILER ROOM	พ6	1	216.0	10	100	5
2-178-1-E	BOILER ROOM	ω6	0	262.8	10	100	5
2-180-1-Q	SELF-SERUICE LAUNDRY	W2	1	144.0	25	40	30
2-195-1-A	ELECTRICAL STOREROOM	W2	1	126.0	25	40	30
2-205-1-Q	ELECTRIC SHOP	W2	1	122.4	25	40	30
2-210-0-Q	GRAUIMETER ROOM	W2	1	63.0	25	40	30
2-210-01-Q	COMPUTER/NAU LAB	W2	0	117.0	25	40	30
2-210-01-Q	COMPUTER/NAU LAB	พ2	1	153.0	25	40	30
2-223-1-LP	PASSAGE	₩ 6	1	36.0	10	100	5
3-162-0-E	ENGINE ROOM NO.2	F3	0	335.6	25	300	5
1-162-3-LP	PASSAGE	C3	0	296.8	10	100	5
1-178-1-E	BOILER ROOM UPPER LEVEL	C3	0	2.4	10	100	5
1-213-3-L	Q.M. SHELTER	C3	0	14.0	10	100	5

Compartment: 2-162-4-Q MACHINE SHOP

USE: Q Areas usually unoccupied: engineering, electronics, galleys

AREA: 606 sq.ft. DECK HEIGHT: 9.0 ft. VOLUME: 5,459 cu.ft.

UNACCEPTABLE LOSS: Code 4 (2 compartments of one type lost to fire) THRESHOLD FREQUENCY OF UNACCEPTABLE LOSS: 1.0000 per ship year

FREQUENCY OF ESTABLISHED BURNING: 0.0023

FUEL LOAD: 12,000 BTUs/sq.ft.

UENTILATION: 1,819 cu ft/min EXCHANGE TIME: 3.0 min.

UENT AREA: 775 sq.in. UENT HEIGHT: 90 in.

FIRE STARTED DUE TO: Ι FRI Time Fire Origin 1 10 10 0 20 Thar Failure 5 10 0 40 1 Dbar Failure 0 0 * calculated as (100 - % Heat Release)/100 X FRI Time or 2 min., whichever is greater.

DETECTION:

Manual:

Occupied 25% of time in port and 50% of time at sea.

Automatic:

Ionization smoke detection system (I)
Photo electric smoke detection system (P)

FIRST AID FIRE PROTECTION:

1 Hand portable monoammonium phosphate fire extinguisher

AUTOMATED FIRE PROTECTION SYSTEMS:

MANUAL FIRE FIGHTING EQUIPMENT:

Compartment: 2-162-4-Q MACHINE SHOP

Barr (Adjoining C	iers Compts ID and Name)	Mat ID	D/H	Area- sq.ft.	Tbar	Dbar	%heat rel
2-146-2-Q	ENGINEERING LOG & DAMAGE	W6	0	162.0	10	100	5
2-162-2-LP	PASSAGE	W2	2	303.3	25	40	30
2-195-2-Q	FIREFIGHTING EQPT ROOM	W2	0	162.0	25	40	30
3-162-2-V	VOID SPACE	F3	0	243.0	25	300	5
3-178-2-F	OIL TANK	F3	0	262.5	2 5	300	5
1-162-4-Q	SHIP STORE	C3	0	202.4	10	100	5
1-162-6-A	SHIP STORE STOREROOM	C3	0	85.6	10	100	5
1-178-4-Q0	SUPPLY OFFICE	C3	0	141.6	10	100	5
1-178-6-Q0	SUPPLY OFFICER OFFICE	C3	0	87.0	10	100	5
1-187-2-QO	1ST LT OFFICE	C3	0	90.0	10	100	5

Compartment: 2-162-5-Q SHIP LAUNDRY

USE: Q Areas usually unoccupied: engineering, electronics, galleys

AREA: 318 sq.ft. DECK HEIGHT: 9.0 ft. VOLUME: 2,867 cu.ft.

UNACCEPTABLE LOSS: Code 4 (2 compartments of one type lost to fire) THRESHOLD FREQUENCY OF UNACCEPTABLE LOSS: 0.3300 per ship year

FREQUENCY OF ESTABLISHED BURNING: 0.0036

FUEL LOAD: 16,000 BTUs/sq.ft.

UENTILATION: 1,433 cu ft/min EXCHANGE TIME: 2.0 min.

UENT AREA: 400 sq.in. UENT HEIGHT: 90 in.

FIRE STARTED DUE TO:	 	I	FRI Time	A	М
Fire Origin	1	60	3	0	20
Tbar Failure	1	40	3	0	40
Dhar Failure	1	20	*	0	0

* calculated as (100 - % Heat Release)/100 X FRI Time or 2 min., whichever is greater.

DETECTION:

Manual:

Occupied 25% of time in port and 35% of time at sea.

Automatic:

Rate of temperature rise detection system (RR) Photo electric smoke detection system (P)

FIRST AID FIRE PROTECTION:

1 Hand portable monoammonium phosphate fire extinguisher

AUTOMATED FIRE PROTECTION SYSTEMS:

MANUAL FIRE FIGHTING EQUIPMENT:

Compartment: 2-162-5-Q SHIP LAUNDRY

Barr (Adjoining C	iers ompts ID and Name)	Mat ID	D∕H	Area- sq.ft.	Tbar	Dbar	%heat rel
2-148-3-Q	WEIGHT ROOM & GYM	W6	0	162.0	10	100	5
2-162-3-LP	PASSAGE	พว	1	159.3	25	40	30
2-180-1-Q	SELF-SERVICE LAUNDRY	W2	0	162.0	25	40	30
3-162-1-F	OIL TANK	F3	0	243.0	25	300	5
3-178-1-F	OIL TANK	F3	0	22.5	25	300	5
1-162-5-LW	WARD BATH	C3	0	98.0	10	100	5
1-162-7-L	WARD NO.1	C3	0	85.6	10	100	5
1-174-1-L	MEDICAL TREATMENT & EXAMI	C3	0	79.0	10	100	5
1-174-3-L	WARD NO.2	C3	0	56.0	10	100	5

Compartment: 2-169-2-T MACHINERY HOIST

USE: T Elevators, dumb waiters

AREA: 49 sq.ft. DECK HEIGHT: 9.0 ft. VOLUME: 448 cu.ft.

THACCEPTABLE LOSS: Code 8 (All compartments of one type lost to fire)
THRESHOLD FREQUENCY OF UNACCEPTABLE LOSS: 1.0000 per ship year

FREQUENCY OF ESTABLISHED BURNING: 0.0001

FUEL LOAD: 12,000 BTUs/sq.ft.

Accumulated dust and grease and cable insulation

UENTILATION: 224 cu ft/min EXCHANGE TIME: 2.0 min.

UENT AREA: 10 sq.in. UENT HEIGHT: 1 in.

FIRE STARTED DUE TO:	l	1	I	FRI Time	A	М	
Fire Origin		 I	100	999	0	30	
Tbar Failure		1	100	999	0	40	
Dbar Failure		ļ	30	*	٥	0	
	alculated a RI Time or						

DETECTION:

Manual:

Occupied 5% of time in port and 5% of time at sea.

Automatic:

AUTOMATED FIRE PROTECTION SYSTEMS:

MANUAL FIRE FIGHTING EQUIPMENT:

Barr (Adjoining C	iers ompts ID and Name)	Mat ID	D/H	Area- sq.ft.	Tbar	Dbar	%heat rel
2-162-0-TU 2-162-2-LP 2-162-2-LP 2-178-2-E 3-162-0-E 1-169-2-T	UPTAKE 2 PASSAGE PASSAGE BOILER ROOM ENGINE ROOM NO.2 MACHINERY HOIST ROOM	₩8 ₩ 5 ₩5 ₩6 F 3 C3	0 1 0 0 1 1	74.7 54.0 74.7 54.0 49.8 49.8	80 5 5 10 25	100 80 80 100 300 100	5 5 5 5 5 5 5 5 5

COMPARTMENT FIRE SAFETY SUMMARY FOR POLAR ICEBREAKER REPLACEMENT

(drawings dated 5/12/1987)

Compartment: 2-178-1-E BOILER ROOM (SECOND DECK LEUEL) Zero strength barrier above.

USE: E Machinery areas which are normally occupied.

AREA: 700 sq.ft. DECK HEIGHT: 9.0 ft. VOLUME: 6,307 cu.ft.

UNACCEPTABLE LOSS: Code 4 (2 compartments of one type lost to fire) THRESHOLD FREQUENCY OF UNACCEPTABLE LOSS: 0.0330 per ship year

FREQUENCY OF ESTABLISHED BURNING: 0.0452

FUEL LOAD: 8,558 BTUs/sq.ft.

Paint and miscellaneous (1.2qpm x 6m/compartment area)

UENTILATION: 3,153 cu ft/min EXCHANGE TIME:
UENT AREA: 500 sq.in. UENT HEIGHT: 70 in. 2.0 min.

FIRE STARTED DUE TO:	l 1	I	FRI Time	A	М
Fire Origin	1	0	3	80	10
Tbar Failure	I	15	3	20	40
Dbar Failure	ł	0	*	0	0

* calculated as (100 - % Heat Release)/100 X FRI Time or 2 min., whichever is greater.

Assumes a fuel or lube oil line rupture No line rupture as adjacent compartment

DETECTION:

Manual:

Occupied 0% of time in port and 15% of time at sea.

Automatic:

Rate of temperature rise detection system (RR) Photo electric smoke detection system (P) Flame detection system (UV or IR) (F)

FIRST AID FIRE PROTECTION:

2 Hand portable dry chemical fire extinguisher (PKP)

AUTOMATED FIRE PROTECTION SYSTEMS:

1 Halon 1301 total flooding system - remotely actuated

MANUAL FIRE FIGHTING EQUIPMENT:

- 1 1 1/2" Seawater hand line with "all purpose nozzle" 50 ft.
- 1 1 1/2" AFFF (3%) hand line with SFL variable nozzle 50 ft.
- 1 1 1/2" AFFF (3%) hand line with SFL variable nozzle 100 ft.

Compartment: 2-178-1-E BOILER ROOM (SECOND DECK LEVEL	Compartment:	2-178-1-E	BOILER	ROOM	(SECOND	DECK	LEUEL:
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Barr (Adjoining C	iers ompts ID and Name)	Mat ID	D/H	Area- sq.ft.	Tbar	Dbar	%heat rel
2-162-0-TU 2-162-1-TS 2-162-3-LP 2-162-3-LP 2-162-3-LP 2-178-2-E 3-162-0-E 1-178-1-E	UPTAKE 2 STAIRCASE PASSAGE PASSAGE PASSAGE BOILER ROOM ENGINE ROOM NO.2 BOILER ROOM UPPER LEVE	₩8 ₩6 ₩6 F3 C0	0 0 0 1 0 0	144.0 63.0 9.0 216.0 262.8 262.8 700.8	80 10 10 10 10 10 25	100 100 100 100 100 100 300	5 5 5 5 5 100

Compartment: 2-178-2-E BOILER ROOM (SECOND DECK LEUEL) Zero strength barrier above.

USE: E Machinery areas which are normally occupied.

AREA: 700 sq.ft. DECK HEIGHT: 9.0 ft. VOLUME: 6,307 cu.ft.

UNACCEPTABLE LOSS: Code 4 (2 compartments of one type lost to fire) THRESHOLD FREQUENCY OF UNACCEPTABLE LOSS: 0.0330 per ship year

FREQUENCY OF ESTABLISHED BURNING: 0.0452

FUEL LOAD: 8,558 BTUs/sq.ft.

Paint and miscellaneous (1.2gpm x 6m/compartment area)

UENTILATION: 3,153 cu ft/min EXCHANGE TIME: UENT AREA: 500 sq.in. UENT HEIGHT: 70 in. 2.0 min.

FIRE STARTED DUE TO:	1	I	FRI Time	A	М
Fire Origin	· · · · · · · · · · · · · · · · · · ·	0	3	80	10
Tbar Failure	1	15	3	20	40
Dbar Failure	l	0	*	0	0

* calculated as (100 - % Heat Release)/100 X FRI Time or 2 min., whichever is greater.

Assumes a fuel or lube oil line rupture No line rupture as adjacent compartment

DETECTION:

Manual:

Occupied 0% of time in port and 15% of time at sea.

Automatic:

Rate of temperature rise detection system (RR) Photo electric smoke detection system (P) Flame detection system (UU or IR) (F)

FIRST AID FIRE PROTECTION:

2 Hand portable dry chemical fire extinguisher (PKP)

AUTOMATED FIRE PROTECTION SYSTEMS:

1 Halon 1301 total flooding system - remotely actuated

MANUAL FIRE FIGHTING EQUIPMENT:

- 1 1 1/2" Seawater hand line with "all purpose nozzle" 50 ft.
- 1 1 1/2" AFFF (3%) hand line with SFL variable nozzle 50 ft.
- 1 1 1/2" AFFF (3%) hand line with SFL variable nozzle 100 ft.

Compartment: 2-178-2-E BOILER ROOM (SECOND DECK LEUEL)

Barr (Adjoining C	iers ompts ID and Name)	Mat ID	D/H	Area- sq.ft.	Tbar	Dbar	%heat rel
2-162-0-TU 2-162-2-LP	UPTAKE 2 PASSAGE	ωe ωe	0 0	144.0 18.0	8 0	100 100	5 5
2-162-2-LP 2-162-2-LP	PASSAGE PASSAGE	พe พย	8	216.0 262.8	10	100	5 5
2-169-2-T 2-178-1-E	MACHINERY HOIST BOILER ROOM	₩e	0	54.0 262.8	10 10	100	5 5
3-162-0-E 1-178-2-E	ENGINE ROOM NO.2 BOILER ROOM UPPER LEVEL	F3 C0	0	700.8 700.8	25 0	300 0	5 100

Compartment: 2-180-1-Q SELF-SERVICE LAUNDRY

USE: Q Areas usually unoccupied: engineering, electronics, galleys

AREA: 288 sq.ft. DECK HEIGHT: 9.0 ft. VOLUME: 2,592 cu.ft.

UNACCEPTABLE LOSS: Code 4 (2 compartments of one type lost to fire)

THRESHOLD FREQUENCY OF UNACCEPTABLE LOSS: 0.3300 per ship year

FREQUENCY OF ESTABLISHED BURNING: 0.0036

FUEL LOAD: 16,000 BTUs/sq.ft.

UENTILATION: 864 cu ft/min EXCHANGE TIME: 3.0 min.

UENT AREA: 200 sq.in. UENT HEIGHT: 90 in.

FIRE STARTED DUE TO:	1	I	FRI Time	A	М	
Fire Origin	1	60	3	0	20	
Tbar Failure	ſ	40	3	O	40	
Dbar Failure	1	20	*	0	0	

* calculated as (100 - % Heat Release)/100 X FRI Time or 2 min., whichever is greater.

DETECTION:

Manual:

Occupied 20% of time in port and 5% of time at sea.

Automatic:

Rate of temperature rise detection system (RR) Photo electric smoke detection system (P)

FIRST AID FIRE PROTECTION:

1 Hand portable monoammonium phosphate fire extinguisher

AUTOMATED FIRE PROTECTION SYSTEMS:

MANUAL FIRE FIGHTING EQUIPMENT:

Compartment: 2-180-1-Q SELF-SERVICE LAUNDRY

Barriers (Adjoining Compts ID and Name)		Mat ID	D∕H	Area- sq.ft.	Tbar	Dbar	%heat rel
2-162-3-LP	PASSAGE	ω2	3	144.0	25	40	30
2-162-5-Di 2-162-5-Q	SHIP LAUNDRY	W2	ō	162.0	25	40	30
2-195-1-A	ELECTRICAL STOREROOM	W2	Ō	162.0	25	40	30
3-178-1-F	OIL TANK	F3	0	240.0	25	300	5
1-174-1-L	MEDICAL TREATMENT & EXAMI	C3	0	264.0	10	100	5
1-174-3-L	WARD NO.2	C3	0	24.0	10	100	5

Compartment: 2-195-1-A ELECTRICAL STOREROOM

USE: AS Storerooms

AREA: 252 sq.ft. DECK HEIGHT: 9.0 ft. UOLUME: 2,268 cq.ft.

UNACCEPTABLE LOSS: Code 2 (Major item involved in fire)

THRESHOLD FREQUENCY OF UNACCEPTABLE LOSS: 0.1000 per ship year

FREQUENCY OF ESTABLISHED BURNING: 0.0009

FUEL LOAD: 1,440,000 BTUs/sq.ft.

Boxes of flammable stores -- Fuel load in psf = 20 x height of deck

VENTILATION: 226 cu ft/min EXCHANGE TIME: 10.0 min. VENT AREA: 175 sq.in. UENT HEIGHT: 90 in.

FIRE STARTED DUE TO: | I FRI A M

Fire Origin | 30 5 0 30 Thar Failure | 20 5 0 20 Dhar Failure | 10 * 0 0

* calculated as (100 - % Heat Release)/100 \times FRI Time or 2 min., whichever is greater.

DETECTION:

Manual:

Occupied 15% of time in port and 15% of time at sea.

Automatic:

Ionization smoke detection system (I)
Photo electric smoke detection system (P)

AUTOMATED FIRE PROTECTION SYSTEMS:

MANUAL FIRE FIGHTING EQUIPMENT:

Compartment: 2-195-1-A ELECTRICAL STOREROOM

Barr: (Adjoining Co	iers ompts ID and Name)	Mat ID	D∕H	Area- sq.ft.	Tbar	Dbar	%heat rel
2-162-3-LP	PASSAGE	ω2	1	126.0	25	40	30
2-180-1-Q	SELF-SERVICE LAUNDRY	W2	0	162.0	25	40	30
2-205-1-Q	ELECTRIC SHOP	W2	0	162.0	25	40	30
3-178-1-F	OIL TANK	F3	0	60.0	25	300	5
3-199-1-F	OIL TANK	F3	0	150.0	25	300	5
1-174-1-L	MEDICAL TREATMENT & EXAMI	C3	0	63.0	10	100	5
1-199-1-L	MEDICAL STORES	C3	0	110.5	10	100	5
1-199-3-L	X-RAY DARKROOM	C3	0	42.5	10	100	5
1-207-1-A	STOREROOM	C3	0	11.2	10	100	5
1-207-3-A	LIFE JACKET LOCKER	C3	Ō	10.8	10	100	5
1-207-5-A	BOAT GEAR LOCKER	C3	0	14.0	10	100	5

Compartment: 2-195-2-Q FIREFIGHTING EQPT ROOM

USE: Q Areas usually unoccupied: engineering, electronics, galleys

AREA: 489 sq.ft. DECK HEIGHT: 9.0 ft. VOLUME: 4,408 cu.ft.

UNACCEPTABLE LOSS: Code 3 (Full compartment lost to fire)

THRESHOLD FREQUENCY OF UNACCEPTABLE LOSS: 0.1000 per ship year

FREQUENCY OF ESTABLISHED BURNING: 0.0009

FUEL LOAD: 32,000 BTUs/sq.ft.

UENTILATION: 881 cu ft/min EXCHANGE TIME: 5.0 min.

UENT AREA: 10 sq.in. UENT HEIGHT: 1 in.

* calculated as (100 - % Heat Release)/100 X FRI Time or 2 min., whichever is greater.

DETECTION:

Manual:

Occupied 15% of time in port and 15% of time at sea.

Automatic:

Photo electric smoke detection system (P)

AUTOMATED FIRE PROTECTION SYSTEMS:

MANUAL FIRE FIGHTING EQUIPMENT:

Compartment: 2-195-2-Q FIREFIGHTING EQPT ROOM

(Adjoining Compte ID and Name) ID)	sq.ft.	1541	DDar	%heat rel
2-162-2-LP PASSAGE W2 2-162-4-Q MACHINE SHOP W2 2-223-4-Q ELECTRICAL EQUIPMENT ROOM W6 3-178-2-F OIL TANK F3 3-199-2-F OIL TANK F3 1-178-4-QO SUPPLY OFFICE C3 1-187-2-QO 1ST LT OFFICE C3 1-198-2-QO SHIP OFFICE C3 1-206-2-QO EXO OFFICE C3		248.4 162.0 157.5 60.0 354.0 24.0 29.9 221.2 116.5	25 25 10 25 25 10 10	40 40 100 300 300 100 100	30 30 5 5 5 5 5

· 1

Compartment: 2-205-1-Q ELECTRIC SHOP

USE: Q Areas usually unoccupied: engineering, electronics, galleys

AREA: 241 sq.ft. DECK HEIGHT: 9.0 ft. VOLUME: 2,172 cu.ft.

UNACCEPTABLE LOSS: Code 8 (All compartments of one type lost to fire)

THRESHOLD FREQUENCY OF UNACCEPTABLE LOSS: 1.0000 per ship year

FREQUENCY OF ESTABLISHED BURNING: 0.0023

FUEL LOAD: 28,000 BTUs/sq.ft.

UENTILATION: 434 cu ft/min EXCHANGE TIME: 5.0 min.

UENT AREA: 175 sq.in. UENT HEIGHT: 1 in.

FIRE STARTED DUE TO: FRI A 1 Time Fire Origin l 15 8 0 20 Thar Failure 1 10 8 0 40 Dbar Failure 5 * 0 0

* calculated as (100 - % Heat Release)/100 \times FRI Time or 2 min., whichever is greater.

DETECTION:

Manual:

Occupied 25% of time in port and 50% of time at sea.

Automatic:

Ionization smoke detection system (I)
Photo electric smoke detection system (P)

FIRST AID FIRE PROTECTION:

1 Hand portable Halon fire extinguisher (1301)

AUTOMATED FIRE PROTECTION SYSTEMS:

MANUAL FIRE FIGHTING EQUIPMENT:

Compartment:	2-205-1-Q ELECTR	IC SHOP	-				
Barr (Adjoining C	iers ompts ID and Name)	Mat ID	D∕H	Area- sq.ft.	Tbar	Dbar	%heat rel
2-162-3-LP 2-195-1-A 2-223-3-Q 3-199-1-F 1-207-1-A 1-207-3-A 1-207-5-A	PASSAGE ELECTRICAL STOREROOM ELECTRICAL EQUIPMENT OIL TANK STOREROOM LIFE JACKET LOCKER BOAT GEAR LOCKER	W2 W6 F3 C3 C3	1 0 0 0 0	122.4 162.0 157.5 204.0 44.8 43.2 54.8	25 25 10 25 10 10	40 40 100 300 100 100	30 30 5 5 5 5
1-20/-J-H	BOTT GETTE BOOKER	Ų3	 1	3-1.0	10	100	J

Compartment: 2-210-0-Q GRAUIMETER ROOM

USE: Q Areas usually unoccupied: engineering, electronics, galleys

AREA: 112 sq.ft. DECK HEIGHT: 9.0 ft. VOLUME: 1,008 cq.ft.

UNACCEPTABLE LOSS: Code 3 (Full compartment lost to fire)

THRESHOLD FREQUENCY OF UNACCEPTABLE LOSS: 0.1000 per ship year

FREQUENCY OF ESTABLISHED BURNING: 0.0009

FUEL LOAD: 12,000 BTUs/sq.ft.

UENTILATION: 504 cu ft/min EXCHANGE TIME: 2.0 min.

UENT AREA: 10 sq.in. UENT HEIGHT: 1 in.

FIRE	STARTED	DUE	TO:	1	I	FRI Time	A	М
1	Fire Ori	gin		1	30	10	0	20
•	Tbar Fai	lure		1	20	10	0	40
1	Dbar Fai	lure		1	10	*	0	0

* calculated as (100 ~ % Heat Release)/100 X FRI Time or 2 min., whichever is greater.

DETECTION:

Manual:

Occupied 25% of time in port and 5% of time at sea.

Automatic:

Ionization smoke detection system (I)
Photo electric smoke detection system (P)

FIRST AID FIRE PROTECTION:

1 Hand portable Halon fire extinguisher (1301)

AUTOMATED FIRE PROTECTION SYSTEMS:

MANUAL FIRE FIGHTING EQUIPMENT:

Compartment: 2-210-0-Q GRAVIMETER ROOM

Barr (Adjoining C	iers ompts ID and Name)	Mat ID	D∕H	Area- sq.ft.	Tbar	Dbar	%heat rel
2-162-2-LP 2-162-3-LP 2-210-01-Q 2-210-01-Q 2-210-01-Q	PASSAGE PASSAGE COMPUTER/NAV LAB COMPUTER/NAV LAB COMPUTER/NAV LAB	₩2 ₩2 ₩2 ₩2	0 1 0 0	63.0 63.0 72.0 72.0	25 25 25 25 25	40 40 40 40 40	30 30 30 30 30
3-162-0-E 1-162-3-LP 1-207-2-LP 1-210-0-M 1-210-1-Q	ENGINE ROOM NO.2 PASSAGE PASSAGE SNALL ARMS STOW & REPAIR BARBER SHOP	F3 C3 C3 C3 C3	0 0 0 0	112.0 2.8 2.8 87.4 19.0	25 10 10 10	300 100 100 100 100	5 5 5 5 5

COMPARTMENT FIRE SAFETY SUMMARY FOR

POLAR ICEBREAKER REPLACEMENT (drawings dated 5/12/1987)

Compartment: 2-210-01-Q COMPUTER/NAU LAB

USE: QO Offices

AREA: 408 sq.ft. DECK HEIGHT: 9.0 ft. VOLUME: 3,672 cu.ft.

UNACCEPTABLE LOSS: Code 3 (Full compartment lost to fire)
THRESHOLD FREQUENCY OF UNACCEPTABLE LOSS: 0.1000 per ship year

FREQUENCY OF ESTABLISHED BURNING: 0.0004

FUEL LOAD: 20,000 BTUs/sq.ft.

UENTILATION: 1,836 cu ft/min EXCHANGE TIME: 2.0 min.

UENT AREA: 175 sq.in. UENT HEIGHT: 90 in.

FIRE STARTED DUE TO: | I FRI A M | Time

Fire Origin | 20 5 0 60
Thar Failure | 15 5 0 40
Dbar Failure | 1 5 * 0 0

* calculated as $(100 - \% \text{ Heat Release})/100 \times FRI \text{ Time or 2 min., whichever is greater.}$

DETECTION:

Manual:

Occupied 5% of time in port and 35% of time at sea.

Automatic:

Photo electric smoke detection system (P)

FIRST AID FIRE PROTECTION:

2 Hand portable Halon fire extinguisher (1301)

AUTOMATED FIRE PROTECTION SYSTEMS:

MANUAL FIRE FIGHTING EQUIPMENT:

Compartment: 2-210-01-Q COMPUTER/NAU LAB

Barric (Adjoining Con	ers mpts ID and Name)	Mat ID	D/H	Area- sq.ft.	Tbar	Dbar	%heat rel
2-162-2-LP 2-162-3-LP 2-162-3-LP	PASSAGE PASSAGE PASSAGE	₩2 ₩2 ₩2	1 0 1 0	81.0 117.0 153.0	25 25 25	40 40 40	30 30 30
2-210-0-Q 2-210-0-Q 2-210-0-Q 2-210-2-TS	GRAVIMETER ROOM GRAVIMETER ROOM GRAVIMETER ROOM STAIRCASE	₩2 ₩2 ₩2	0 0 0	72.0 72.0 126.0 117.0	25 25 25 5	40 40 40 80	30 30 30 5
2-223-0-C 3-162-0-E 1-162-3-LP	ENGINEERING CONTROL CENTE ENGINE ROOM NO.2 PASSAGE	W6 F3 C3	0 0 0	360.0 408.0 89.4	10 25 10	100 300 100	5 5 5
1-207-2-LP 1-210-0-M 1-210-1-Q 1-210-2-Q	PASSAGE SMALL ARMS STOW & REPAIR BARBER SHOP MAIL ROOM	C3 C3 C3	0 0 0	3.6 70.1 88.1 64.0	10 10 10 10	100 100 100 100	5 5 5
1-210-3-A 1-213-1-LW 1-213-3-L 1-218-2-A	GEAR LOCKER WC & WR Q.M. SHELTER C.G. LOCKER	C3 C3	0 0 0	9.0 28.8 7.0 36.8	10 10 10	100 100 100 100	5 5 5 5
1-210-2-M	O.G. BOCKER	V3		30.0	10	100	J

Compartment: 2-210-2-TS STAIRCASE

USE: TS Staircases

AREA: 104 sq.ft. DECK HEIGHT: 9.0 ft. VOLUME: 936 cu.ft.

UNACCEPTABLE LOSS: Code 8 (All compartments of one type lost to fire)

THRESHOLD FREQUENCY OF UNACCEPTABLE LOSS: 0.1000 per ship year

FREQUENCY OF ESTABLISHED BURNING: 0.0001

FUEL LOAD: 800 BTUs/sq.ft. Paint-no carpet or laminate

187 cu ft/min EXCHANGE TIME:

OF THE STATE O UENTILATION: 5.0 min.

UENT AREA: 10 sq.in. UENT HEIGHT: 1 in.

FIRE STARTED DUE TO: 1 I FRI 1 Time Fire Origin i 100 999 0 30 Tbar Failure 1 100 999 0 40 90 Dbar Failure 1 0 0

* calculated as (100 - % Heat Release)/100 X FRI Time or 2 min., whichever is greater.

DETECTION:

Manual:

Occupied 30% of time in port and 50% of time at sea.

Automatic:

AUTOMATED FIRE PROTECTION SYSTEMS:

MANUAL FIRE FIGHTING EQUIPMENT:

Compartment: 2-210-2-TS STAIRCASE

Barr (Adjoining C	iers ompts ID and Name)	Mat ID	D/H	Area- sq.ft.	Tbar	Dbar	%heat rel
2-162-2-LP 2-162-2-LP 2-210-01-Q 2-223-0-C 3-162-0-E 1-207-2-LP 1-213-2-TS	PASSAGE PASSAGE COMPUTER/NAU LAB ENGINEERING CONTROL CENTE ENGINE ROOM NO.2 PASSAGE STAIRCASE	U5 U5 U6 F3 C3	0 1 0 0 1	72.0 117.0 117.0 72.0 104.0 65.6 38.4	5 5 10 25 10	80 80 100 300 100	5 5 5 5 5 5 5 5

Compartment: 2-223-0-C ENGINEERING CONTROL CENTER

MOR. O. Chin and fine control approxima areas permally occupied

USE: C Ship and fire control operating areas normally occupied.

AREA: 1661 sq.ft. DECK HEIGHT: 9.0 ft. UOLUME: 14,957 cu.ft.

UNACCEPTABLE LOSS: Code 2 (Major item involved in fire)

THRESHOLD FREQUENCY OF UNACCEPTABLE LOSS: 0.0330 per ship year

FREQUENCY OF ESTABLISHED BURNING: 0.0012

FUEL LOAD: 12,000 BTUs/sq.ft.

UENTILATION: 7,478 cu ft/min EXCHANGE TIME: 2.0 min.

UENT AREA: 250 sq.in. UENT HEIGHT: 90 in.

FIRE STARTED DUE TO: | I FRI A M | Time

Fire Origin | 70 12 90 95
Thar Failure | 55 12 0 70
Dbar Failure | 1 20 * 0 0

 \star calculated as (100 - % Heat Release)/100 \times FRI Time or 2 min., whichever is greater.

Always occupied.

DETECTION:

Manual:

Occupied 100% of time in port and 100% of time at sea.

Automatic:

Rate of temperature rise detection system (RR) Photo electric smoke detection system (P)

FIRST AID FIRE PROTECTION:

4 Hand portable Halon fire extinguisher (1301)

AUTOMATED FIRE PROTECTION SYSTEMS:

MANUAL FIRE FIGHTING EQUIPMENT:

Compartment: 2-223-0-C ENGINEERING CONTROL CENTER

Barri (Adjoining Co	ers mpts ID and Name)	Mat ID	D/H	Area- sq.ft.	Tbar	Dbar	%heat rel
2-210-01-Q	COMPUTER/NAU LAB	W6	0	360.0	10	100	5
2-210-2-TS	STAIRCASE	ωe	Ö	72.0	10	100	5
2-223-1-LP	PASSAGE	W2	2	18.0	25	40	30
2-223-1-LP	PASSAGE	ω ₂	ō	36.0	25	40	30
2-223-1-LP	PASSAGE	W2	Ō	273.6	25	40	30
2-223-2-LP	PASSAGE	ω 2	ō	251.1	25	40	30
2-251-2-A	BATTERY ROOM	W2	0	45.0	25	40	30
2-251-2-A	BATTERY ROOM	W2	0	63.0	25	40	30
2-256-2-TS	STAIRCASE	W 5	1	36.0	5	80	5
2-262-1-Q	IC/GYRO ROOM	W2	1	40.5	25	40	30
2-262-1-Q	IC/GYRO ROOM	W2	0	40.5	25	40	30
2-262-1-Q	IC/GYRO ROOM	W2	0	139.5	25	40	30
2-262-2-QF	FAN ROOM	W6	0	153.0	10	100	5
3-223-0-E	MOTOR GENERATOR ROOM	F3	0	1661.9	25	300	5
1-223-0-C	AFT REPAIR NO.3 & DAMAGE	C3	0	608.0	10	100	5
1-223-2-LP	PASSAGE	C3	0	120.6	10	100	5
1-223-4-A	LIFE JACKET LOCKER	C3	0	40.0	10	100	5
1-233-2-A	BOAT GEAR LOCKER	C3	G	24.0	10	100	5
1-239-0-Q	DRY LAB	C3	0	488.0	10	100	5
1-239-1-LP	PASSAGE	C3	0	3 8 . 4	10	100	5
1-239-2-A	PHOTO LAB	C3	0	47.6	10	100	5
1-2 4 5-1-Q	SCIENCE REEFER MACHY, ROO		0	78 4	10	100	5
1-255-0-Q	ELECTRONICS LAB	C3	0	88.2	10	100	5
1-255-1-A	REEFER	C3	0	6 7 .9	10	100	5

Compartment: 2-223-1-LP PASSAGE

USE: LP Passageways

AREA: 206 sq.ft. DECK HEIGHT: 9.0 ft. VOLUME: 1,854 cu.ft.

UNACCEPTABLE LOSS: Code 8 (All compartments of one type lost to fire)

THRESHOLD FREQUENCY OF UNACCEPTABLE LOSS: 0.1000 per ship year

FREQUENCY OF ESTABLISHED BURNING: 0.0001

FUEL LOAD: 3,200 BTUs/sq.ft.

Paint, cable insulation laminate on blkhds-no dropped ceiling

UENTILATION: 370 cu ft/min EXCHANGE TIME: 5.0 min.

UENT AREA: 750 sq.in. UENT HEIGHT: 12 in.

FIRE STARTED DUE TO:		I	FRI Time	Α	М
Fire Origin Tbar Failure Dbar Failure	 	95 80 40	20 20 *	0	40 6 0 0

* calculated as (100 - % Heat Release)/100 X FRI Time or 2 min., whichever is greater.

DETECTION:

Manual:

Occupied 30% of time in port and 50% of time at sea.

Automatic:

Photo electric smoke detection system (P)

AUTOMATED FIRE PROTECTION SYSTEMS:

MANUAL FIRE FIGHTING EQUIPMENT:

Compartment: 2-223-1-LP PASSAGE

Barri (Adjoining Co	ers ompts ID and Name)	Mat ID	D∕H	Area- sq.ft.	Tbar	Dbar	%heat rel
2-162-3-LP	PASSAGE	₩ 6	1	36.0	10	100	5
2-223-0-C	ENGINEERING CONTROL CENTE	ω2	2	18.0	25	40	3 0
2-22 3- 0-C	ENGINEERING CONTROL CENTE	W2	0	36.0	25	40	30
2-223-0-C	ENGINEERING CONTROL CENTE	W2	0	273.6	25	40	30
2-223-3-Q	ELECTRICAL EQUIPMENT	W2	1	305.1	25	40	30
2-256-1-TS	STAIRCASE	ω 5	0	36.0	5	80	5
2-256-1-TS	STAIRCASE	W5	1	126.9	5	80	5
2-262-1-0	IC/GYRO ROOM	W2	0	140.4	25	40	30
2-271-3-LP	PASSAGE	W6	1	36.0	10	100	5
3-223-0-E	MOTOR GENERATOR ROOM	F3	0	206.0	25	300	5
1-245-1-Q	SCIENCE REEFER MACHY. ROO	C3	0	3.2	10	100	5
1-255-1-A	REEFER	C3	0	32.0	10	100	5

Compartment: 2-223-2-LP PASSAGE

USE: LP Passageways

AREA: 192 sq.ft. DECK HEIGHT: 9.0 ft. VOLUME: 1,728 cu.ft.

UNACCEPTABLE LOSS: Code 8 (All compartments of one type lost to fire)

THRESHOLD FREQUENCY OF UNACCEPTABLE LOSS: 0.1000 per ship year

FREQUENCY OF ESTABLISHED BURNING: 0.0001

FUEL LOAD: 3,200 BTUs/sq.ft.

Paint, cable insulation laminate on blkhds-no dropped ceiling

UENTILATION: 345 cu ft/min EXCHANGE TIME: 5.0 min

UENT AREA: 625 sq.in. UENT HEIGHT: 12 in.

FIRE STARTED DUE TO:	1	I	FRI Time	A	М	
Fire Origin		95	20	0	40	
Tbar Failure	1	80	20	0	60	
Dbar Failure	1	40	*	0	0	
*	calculated as	(100	- % Hea	at	Release)/100	×
	FRI Time or 2	min.,	which	eve	r is greater	

DETECTION:

Manual:

Occupied 30% of time in port and 50% of time at sea.

Automatic:

Photo electric smoke detection system (P)

AUTOMATED FIRE PROTECTION SYSTEMS:

MANUAL FIRE FIGHTING EQUIPMENT:

Compartment: 2-223-2-LP PASSAGE

Barri (Adjoining Co	ers mpts ID and Name)	Mat ID	D∕H	Area- sq.ft.	Tbar	Dbar	%heat rel
2-162-2-LP 2-223-0-C 2-223-4-Q 2-251-2-A 2-256-2-TS 2-271-4-LP 3-223-0-E 1-223-4-A 1-223-6-L 1-233-2-A 1-239-2-A 1-255-2-TS	PASSAGE ENGINEERING CONTROL CENTE ELECTRICAL EQUIPMENT ROOM BATTERY ROOM STAIRCASE PASSAGE MOTOR GENERATOR ROOM LIFE JACKET LOCKER Q.M. SHELTER BOAT GEAR LOCKER PHOTO LAB STAIRCASE	₩6 ₩2 ₩2 ₩5 ₩6 F3 C3 C3 C3	1 0 1 0 1 1 0 0 0	36.0 251.1 432.0 45.0 135.9 36.0 192.0 24.0 16.0 24.0 64.0	10 25 25 25 10 25 10 10	100 40 40 40 80 100 300 100 100 100	5 30 30 30 5 5 5 5 5

COMPARTMENT FIRE SAFETY SUMMARY FOR POLAR ICEBREAKER REPLACEMENT

POLAR ICEBREAKER REPLACEMENT (drawings dated 5/12/1987)

Compartment: 2-223-3-Q ELECTRICAL EQUIPMENT

USE: Q Areas usually unoccupied: engineering, electronics, galleys

AREA: 803 sq.ft. DECK HEIGHT: 9.0 ft. VOLUME: 7,235 cq.ft.

UNACCEPTABLE LOSS: Code 2 (Major item involved in fire)

THRESHOLD FREQUENCY OF UNACCEPTABLE LOSS: 0.0330 per ship year

FREQUENCY OF ESTABLISHED BURNING: 0.0012

FUEL LOAD: 28,000 BTUs/sq.ft.

UENTILATION: 1,447 cu ft/min EXCHANGE TIME: 5.0 min.

UENT AREA: 175 sq.in. UENT HEIGHT: 90 in.

FIRE STARTED DUE TO: | I FRI A M Time

Fire Origin | 15 8 0 20 Thar Failure | 10 8 0 40 Dhar Failure | 5 * 0 0

* calculated as (100 - % Heat Release)/100 X FRI Time or 2 min., whichever is greater.

DETECTION:

Manual:

Occupied 25% of time in port and 50% of time at sea.

Automatic:

Ionization smoke detection system (I)
Photo electric smoke detection system (P)

FIRST AID FIRE PROTECTION:

2 Hand portable Halon fire extinguisher (1301)

AUTOMATED FIRE PROTECTION SYSTEMS:

MANUAL FIRE FIGHTING EQUIPMENT:

Compartment: 2-223-3-Q ELECTRICAL EQUIPMENT

Barr (Adjoining C	iers ompts ID and Name)	Mat ID	D∕H	Area- sq.ft.	Tbar	Dbar	%heat rel
2-205-1-Q 2-223-1-LP 2-256-1-TS 2-271-5-L 3-223-1-F	ELECTRIC SHOP PASSAGE STAIRCASE CREW BERTHING OIL TANK	W6 W2 W5 W6 F3	0 1 0 0	157.5 305.1 126.9 144.0 358.7	10 25 5 10 25	100 40 80 100 300	5 30 5 5 5
3-247-1-F	OIL TANK	F 3	0 1	329.2	25	300	5

Compartment: 2-223-4-Q ELECTRICAL EQUIPMENT ROOM NO.2

USE: Q Areas usually unoccupied: engineering, electronics, galleys

AREA: 803 sq.ft. DECK HEIGHT: 9.0 ft. VOLUME: 7,235 cu.ft.

UNACCEPTABLE LOSS: Code 2 (Major item involved in fire)

THRESHOLD FREQUENCY OF UNACCEPTABLE LOSS: 0.0330 per ship year

FREQUENCY OF ESTABLISHED BURNING: 0.0012

FUEL LOAD: 28,000 BTUs/sq.ft.

UENTILATION: 1,447 cu ft/min EXCHANGE TIME: 5.0 min.

UENT AREA: 175 sq.in. UENT HEIGHT: 90 in.

FIRE STARTED DUE TO: , l I FRI A Time -------Fire Origin 1 15 8 0 20 8 0 40 Thar Failure l 10 Dbar Failure ***** 0 5 0 1

* calculated as $(100 - \% \text{ Heat Release})/100 \times FRI$ Time or 2 min., whichever is greater.

DETECTION:

Manual:

Occupied 25% of time in port and 50% of time at sea.

Automatic:

Ionization smoke detection system (I)
Photo electric smoke detection system (P)

FIRST AID FIRE PROTECTION:

2 Hand portable Halon fire extinguisher (1301)

AUTOMATED FIRE PROTECTION SYSTEMS:

MANUAL FIRE FIGHTING EQUIPMENT:

Compartment: 2-223-4-Q ELECTRICAL EQUIPMENT ROOM NO.2

2-195-2-Q FIREFIGHTING EQPT ROOM W6 0 157.5 10 100 5 2-223-2-LP PASSAGE W2 1 432.0 25 40 30 2-271-6-L CREW BERTHING W6 0 144.0 10 100 5 3-223-2-F OIL TANK F3 0 358.7 25 300 5 3-247-2-F OIL TANK F3 0 329.2 25 300 5		iers Compts ID and Name)	Mat ID	D∕H	Area- sq.ft.	Tbar	Dbar	%heat rel
2-271-6-L CREW BERTHING W6 0 144.0 10 100 5 3-223-2-F OIL TANK F3 0 358.7 25 300 5	•			0 1				-
	2-271-6-L 3-223-2-F	OIL TANK	F3	Õ	358.7	25	300	5

Compartment: 2-251-2-A BATTERY ROOM

USE: Q Areas usually unoccupied: engineering, electronics, galleys

AREA: 35 sq.ft. DECK HEIGHT: 9.0 ft. VOLUME: 315 cu.ft.

UNACCEPTABLE LOSS: Code 2 (Major item involved in fire)
THRESHOLD FREQUENCY OF UNACCEPTABLE LOSS: 1.0000 per ship year

FREQUENCY OF ESTABLISHED BURNING: 0.0012

FUEL LOAD: 40,000 BTUs/sq.ft.

UENTILATION: 157 cu ft/min EXCHANGE TIME: 2.0 min.

UENT AREA: 10 sq.in. UENT HEIGHT: 1 in.

FIRE STARTED DUE TO:

| I FRI A M | Time

Fire Origin | 10 1 0 20

Thar Failure | 10 1 0 40

Dhar Failure | 0 * 0 0 |

* calculated as (100 - % Heat Release)/100 × FRI Time or 2 min., whichever is greater.

DETECTION:

Manual:

Occupied 5% of time in port and 10% of time at sea.

Automatic:

AUTOMATED FIRE PROTECTION SYSTEMS:

MANUAL FIRE FIGHTING EQUIPMENT:

Compartment: 2-256-1-TS STAIRCASE

USE: TS Staircases

AREA: 56 sq.ft. DECK HEIGHT: 9.0 ft. VOLUME: 507 cu.ft.

UNACCEPTABLE LOSS: Code 8 (All compartments of one type lost to fire)

THRESHOLD FREQUENCY OF UNACCEPTABLE LOSS: 0.1000 per ship year

FREQUENCY OF ESTABLISHED BURNING: 0.0001

FUEL LOAD: 800 BTUs/sq.ft.

Paint-no carpet or laminate

101 cu ft/min EXCHANGE TIME: sq.in. UENT HEIGHT: 1 in. **VENTILATION:** 5.0 min.

UENT AREA: 10 sq.in.

FIRE STARTED DUE TO: FRI A l I i Time Fire Origin 1 100 999 0 30

DETECTION:

Manual:

Occupied 30% of time in port and 50% of time at sea.

Automatic:

AUTOMATED FIRE PROTECTION SYSTEMS:

MANUAL FIRE FIGHTING EQUIPMENT:

Compartment: 2-256-1-TS STAIRCASE

Barr (Adjoining C	iers ompts ID and Name)	Mat ID	D/H	Area- sq.ft.	Tbar	Dbar	%heat rel
2-223-1-LP 2-223-1-LP	PASSAGE PASSAGE	ພ5 ພ5	0	36.0 126.9	5 5	80 80	5
2-223-3-Q 2-271-5-L 3-223-0-E	ELECTRICAL EQUIPMENT CREW BERTHING MOTOR GENERATOR ROOM	W5 W6 F3	0 0 1	126.9 36.0 56.4	5 10 25		5 5 5

Compartment: 2-256-2-TS STAIRCASE

USE: TS Staircases

AREA: 105 sq.ft. DECK HEIGHT: 9.0 ft. VOLUME: 951 cq.ft.

UNACCEPTABLE LOSS: Code 8 (All compartments of one type lost to fire)

THRESHOLD FREQUENCY OF UNACCEPTABLE LOSS: 0.1000 per ship year

FREQUENCY OF ESTABLISHED BURNING: 0.0001

800 BTUs/sq.ft. FUEL LOAD:

Paint-no carpet or laminate

190 cu ft/min EXCHANGE TIME: 5.0 min. UENTILATION:

VENT HEIGHT: 1 in. UENT AREA: 10 sq.in.

i I FRI A FIRE STARTED DUE TO: Time 1 100 999 0 30 Fire Origin 1 100 999 0 40 Thar Failure * 0 0 90 Dbar Failure \star calculated as (100 - % Heat Release)/100 \times FRI Time or 2 min., whichever is greater.

DETECTION:

Manual:

Occupied 30% of time in port and 50% of time at sea.

Automatic:

AUTOMATED FIRE PROTECTION SYSTEMS:

MANUAL FIRE FIGHTING EQUIPMENT:

Compartment:	2-256-2-TS	STAIRCASE
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Barr (Adjoining C	iers ompts ID and Name)	Mat ID	D∕H	Area- sq.ft.	Tbar	Dbar	%heat rel
2-223-0-C 2-223-2-LP 2-251-2-A 2-262-2-QF 2-271-4-LP 3-223-0-E 1-223-2-LP	ENGINEERING CONTROL CENTE PASSAGE BATTERY ROOM FAN ROOM PASSAGE MOTOR GENERATOR ROOM PASSAGE	W5 W5 W6 W6 F3 C3	1 1 1 0 1 0	36.0 135.9 63.0 99.9 63.0 105.7 45.3	5 5 10 10 25 10	80 80 80 100 100 300 100	5555555
1-255-2-TS	STAIRCASE	C3	1	60.4	10	100	5

Compartment: 2-262-1-Q IC/GYRO ROOM

USE: Q Areas usually unoccupied: engineering, electronics, galleys

AREA: 242 sq.ft. DECK HEIGHT: 9.0 ft. VOLUME: 2,180 cu.ft.

UNACCEPTABLE LOSS: Code 2 (Major item involved in fire)

THRESHOLD FREQUENCY OF UNACCEPTABLE LOSS: 0.1000 per ship year

FREQUENCY OF ESTABLISHED BURNING: 0.0012

FUEL LOAD: 12,000 BTUs/sq.ft.

UENTILATION: 1,090 cu ft/min EXCHANGE TIME: 2.0 min.

UENT AREA: 10 sq.in. UENT HEIGHT: 1 in.

* calculated as (100 - % Heat Release)/100 \times FRI Time or 2 min., whichever is greater.

DETECTION:

Manual:

Occupied 25% of time in port and 5% of time at sea.

Automatic:

Ionization smoke detection system (I)
Photo electric smoke detection system (P)

FIRST AID FIRE PROTECTION:

1 Hand portable Halon fire extinguisher (1301)

AUTOMATED FIRE PROTECTION SYSTEMS:

MANUAL FIRE FIGHTING EQUIPMENT:

Compartment: 2-262-1-Q IC/GYRO ROOM

Barr: (Adjoining Co	ers ompts ID and Name)	Mat ID	D/H	Area- sq.ft.	Tbar	Dbar	%heat rel
2-223-0-C 2-223-0-C 2-223-0-C	ENGINEERING CONTROL CENTE ENGINEERING CONTROL CENTE ENGINEERING CONTROL CENTE	₩2 ₩2	1 0 0	40.5 40.5 139.5	25 25 25	40 40	30 30 30
2-223-1-LP 2-262-2-QF 2-271-1-L	PASSAGE FAN ROOM CREW BERTHING	₩2 ₩6 ₩6	0 0 0	140.4 99.9 144.0	25 10 10	100	30 5 5
2-271-3-LP 3-223-0-E 1-255-0-Q 1-255-1-A	PASSAGE MOTOR GENERATOR ROOM ELECTRONICS LAB REEFER	W6 F3 C3 C3	0 0 0	36.0 242.3 22.2 220.1	10 25 10 10	300	5 5 5
1 200 1 11		~~		~~~	10	100	.

Compartment: 2-262-2-QF FAN ROOM

USE: QF Fan Rooms

AREA: 188 sq.ft. DECK HEIGHT: 9.0 ft. UOLUME: 1,698 cu.ft.

UNACCEPTABLE LOSS: Code 3 (Full compartment lost to fire)
THRESHOLD FREQUENCY OF UNACCEPTABLE LOSS: 0.1000 per ship year

FREQUENCY OF ESTABLISHED BURNING: 0.0004

FUEL LOAD: 4,000 BTUs/sq.ft.

UENTILATION: 849 cq ft/min EXCHANGE TIME: 2.0 min.

UENT AREA: 10 sc.in. UENT HEIGHT: 1 in.

* calculated as (100 - % Heat Release)/100 X FRI Time or 2 min., whichever is greater.

DETECTION:

Manual:

Occupied 0% of time in port and 0% of time at sea.

Automatic:

Photo electric smoke detection system (P)

FIRST AID FIRE PROTECTION:

1 Hand portable carbon dioxide fire extinguisher

AUTOMATED FIRE PROTECTION SYSTEMS:

MANUAL FIRE FIGHTING EQUIPMENT:

Compartment: 2-262-2-QF FAN ROOM

Barriers (Adjoining Compts ID and Name	Mat ID	D/H	Area- sq.ft.	Tbar	Dbar	%heat rel
2-223-0-C ENGINEERING CON 2-256-2-TS STAIRCASE 2-262-1-Q IC/GYRO ROOM 2-271-2-L CREW BERTHING 2-271-4-LP PASSAGE 3-223-0-E MOTOR GENERATOR 1-223-2-LP PASSAGE 1-255-0-Q ELECTRONICS LAB	ພຣ ພຣ ພຣ ພຣ	0 1 0 0 0 0	153.0 99.9 99.9 144.0 9.0 188.7 11.1 177.6	10 10 10 10 10 25 10	100 100 100 100 100 300 100	5 5 5 5 5 5 5

Compartment: 2-271-1-L CREW BERTHING

USE: L6 Berthing Space for 6

AREA: 245 sq.ft. DECK HEIGHT: 9.0 ft. VOLUME: 2,210 cu.ft.

UNACCEPTABLE LOSS: Code 7 (5 compartments of one type lost to fire) THRESHOLD FREQUENCY OF UNACCEPTABLE LOSS: 0.1000 per ship year

FREQUENCY OF ESTABLISHED BURNING: 0.0008

FUEL LOAD: 31,270 BTUs/sq.ft.

No. of people x 160/compartment area

UENTILATION: 442 cu ft/min EXCHANGE TIME: 5.0 min.

UENT AREA: 275 sq.in. UENT HEIGHT: 90 in.

FIRE STARTED DUE TO:	l 1	I	FRI Time	A	М
Fire Origin	i	10	4	0	30
Thar Failure	l	5	4	0	50
Dbar Failure	1	0	*	0	0
* calculat	ed as	(100	- % Hea	at	Release)/10

* calculated as (100 - % Heat Release)/100 X FRI Time or 2 min., whichever is greater.

DETECTION:

Manual:

Occupied 5% of time in port and 20% of time at sea.

Automatic:

Ionization smoke detection system (I)
Photo electric smoke detection system (P)

FIRST AID FIRE PROTECTION:

1 Hand portable monoammonium phosphate fire extinguisher

AUTOMATED FIRE PROTECTION SYSTEMS:

MANUAL FIRE FIGHTING EQUIPMENT:

Compartment: 2-271-1-L CREW BERTHING

Barr (Adjoining C	iers ompts ID and Name)	Mat ID	D/H	Area- sq.ft.	Tbar	Dbar	%heat rel
2-262-1-Q 2-271-2-L 2-271-3-LP 2-281-1-LW 2-281-1-LW 2-291-3-L 3-271-0-E 1-271-0-Q	IC/GYRO ROOM CREW BERTHING PASSAGE WR WC & SHR WR WC & SHR CREW BERTHING AUXILIARY MACHINERY ROOM WET LAB	₩6 ₩2 ₩3 ₩3 ₩2 F3	0 0 1 1 0 0	144.0 96.3 180.0 72.0 83.7 72.0 245.6 245.6	10 25 25 25 25 25 25 25	100 40 40 60 60 40 300 100	5 30 30 25 25 30 5

Compartment: 2-271-2-L CREW BERTHING

USE: L10 Berthing Space for 10

AREA: 245 sq.ft. DECK HEIGHT: 9.0 ft. UOLUME: 2,210 cu.ft.

UNACCEPTABLE LOSS: Code 7 (5 compartments of one type lost to fire) THRESHOLD FREQUENCY OF UNACCEPTABLE LOSS: 0.1000 per ship year

FREQUENCY OF ESTABLISHED BURNING: 0.0008

FUEL LOAD: 52,117 BTUs/sq.ft.

No. of people x 160/compartment area

UENTILATION: 442 cu ft/min EXCHANGE TIME: 5.0 min.

UENT AREA: 250 sq.in. UENT HEIGHT: 90 in.

FIRE STA	RTED DUE	то:	1	I	FRI Time	A	М
Fire	Origin		 I	10	4	0	30
	Failure		ı	5	4	0	50
Dbar	Failure		ı	O	*	0	Ω

* calculated as (100 - % Heat Release)/100 \times FRI Time or 2 min., whichever is greater.

DETECTION:

Manual:

Occupied 5% of time in port and 20% of time at sea.

Automatic:

Ionization smoke detection system (I)
Photo electric smoke detection system (P)

FIRST AID FIRE PROTECTION:

1 Hand portable monoammonium phosphate fire extinguisher

AUTOMATED FIRE PROTECTION SYSTEMS:

MANUAL FIRE FIGHTING EQUIPMENT:

Compartment: 2-271-2-L CREW BERTHING

Barr (Adjoining C	iers ompts ID and Name)	Mat ID	D∕H	Area- sq.ft.	Tbar	Dbar	%heat rel
2-262-2-QF	FAN ROOM	W6	0	144.0	10	100	5
2-271-1-L	CREW BERTHING	W2	0	96.3	25	40	30
2-271-4-LP	PASSAGE	W2	1	180.0	25	40	30
2-281-2-LW	WR WC & SHR	พз	1	72.0	25	60	2 5
2-281-2-LW	WR WC & SHR	WЗ	0	83.7	25	60	25
2-291-4-L	CREW BERTHING	W2	0	72 .0	25	40	30
3-271-0-E	AUXILIARY MACHINERY ROOM	F3	0	245.6	25	300	5
1-271-0-0	WET LAB	C3	0	213.6	10	100	5
1-287-2-Q	WET LAB NO.2	C3	0	32.0	10	100	5

Compartment: 2-271-3-LP PASSAGE

Zero strength barrier adjacent.

USE: LP Passageways

AREA: 267 sq.ft. DECK HEIGHT: 9.0 ft. VOLUME: 2,404 cu.ft.

UNACCEPTABLE LOSS: Code 8 (All compartments of one type lost to fire) THRESHOLD FREQUENCY OF UNACCEPTABLE LOSS: 0.1000 per ship year

FREQUENCY OF ESTABLISHED BURNING: 0.0001

FUEL LOAD: 3,200 BTUs/sq.ft.

Paint, cable insulation laminate on blkhds-no dropped ceiling

UENTILATION: 480 cu ft/min EXCHANGE TIME: 5.0 min.

UENT AREA: 875 sq.in. UENT HEIGHT: 12 in.

FIRE STARTED DUE TO:	1	I	FRI Time	A	М
Fire Origin	!	95	20	0	40
Thar Failure	<u> </u>	80	20	U	60
Dhar Failure	,	40	*	0	0

* calculated as (100 - % Heat Release)/100 X FRI Time or 2 min., whichever is greater.

DETECTION:

Manual:

Occupied 30% of time in port and 50% of time at sea.

Automatic:

Photo electric smoke detection system (P)

AUTOMATED FIRE PROTECTION SYSTEMS:

MANUAL FIRE FIGHTING EQUIPMENT:

- 2 1 1/2" Seawater hand line with "all purpose nozzle" 100 ft.
- 2 1 1/2" AFFF (3%) hand line with SFL variable nozzle 50 ft.

Compartment: 2-271-3-LP PASSAGE

Barr: (Adjoining Co	iers ompts ID and Name)	Mat ID	D/H	Area- sq.ft.	Tbar	Dbar	%heat rel
2-223-1-LP	PASSAGE	₩6	1	36.0	10	100	5
2-262-1-Q	IC/GYRO ROOM	W6	0	36.0	10	100	5
2-271-1-L	CREW BERTHING	W2	1	180.0	25	40	30
2-271-4-LP	PASSAGE	ωo	0	41.4	0	0	100
2-271-5-L	CREW BERTHING	W2	1	<i>7</i> 5.6	25	40	30
2-279-1-TS	STAIRCASE	W 5	0	36.0	5	80	5
2-279-1-TS	STAIRCASE	W5	1	81.0	5	80	5
2-284-1-LW	wr wc & shr	ผ3	0	63.0	25	60	2 5
2-291-3-L	CREW BERTHING	W2	1	138.6	25	40	30
2-291-3-L	CREW BERTHING	W2	0	144.0	25	40	30
2-295-1-LW	WR WC & SHR	WЗ	0	45.0	25	60	25
2-295-3-L	CREW BERTHING	W2	1	95.4	25	40	30
2-311-0-Q	WINCH ROOM	W6	1	180.0	10	100	5
3-271-0-E	AUXILIARY MACHINERY ROOM	F3	0	267.2	25	300	5
1-271-0-Q	WET LAB	C3	0	112.8	10	100	5
1-295-1-Q	VESTIBULE	C3	0	137.6	10	100	5

COMPARTMENT FIRE SAFETY SUMMARY FOR

POLAR ICEBREAKER REPLACEMENT (drawings dated 5/12/1987)

Compartment: 2-271-4-LP PASSAGE

Zero strength barrier adjacent.

USE: LP Passageways

AREA: 264 sq.ft. DECK HEIGHT: 9.0 ft. VOLUME: 2,383 cu.ft.

UNACCEPTABLE LOSS: Code 8 (All compartments of one type lost to fire)

THRESHOLD FREQUENCY OF UNACCEPTABLE LOSS: 0.1000 per ship year

FREQUENCY OF ESTABLISHED BURNING: 0.0001

FUEL LOAD: 3,200 BTUs/sq.ft.

Paint, cable insulation laminate on blkhds-no dropped ceiling

VENTILATION: 476 cu ft/min EXCHANGE TIME: 5.0 min.

UENT AREA: 1125 sq.in. UENT HEIGHT: 12 in.

FIRE STARTED DUE TO	: I	I	FRI Time	A 	М
Fire Origin Thar Failure	!	95 80	20 20	0	40 60
Dbar Failure	Į.	40	*	0	0

* calculated as (100 - % Heat Release)/100 X FRI Time or 2 min., whichever is greater.

DETECTION:

Manual:

Occupied 30% of time in port and 50% of time at sea.

Automatic:

Photo electric smoke detection system (P)

AUTOMATED FIRE PROTECTION SYSTEMS:

MANUAL FIRE FIGHTING EQUIPMENT:

- 2 1 1/2" Seawater hand line with "all purpose nozzle" 100 ft.
- 2 1 1/2" AFFF (3%) hand line with SFL variable nozzle 50 ft.

Compartment: 2-271-4-LP PASSAGE

Barr (Adjoining C	iers ompts ID and Name)	Mat ID	D∕H	Area- sq.ft.	Tbar	Dbar	%heat rel
2-223-2-LP	PASSAGE	₩6	1	36.0	10	100	5
2-256-2-TS	STAIRCASE	W6	0	63.0	10	100	5
2-262-2-QF	FAN ROOM	₩6	0	9.0	10	100	5
2-271-2-L	CREW BERTHING	W2	1	180.0	25	40	30
2-271-3-LP	PASSAGE	ωo	0	41.4	0	0	100
2-271-6-L	CREW BERTHING	₩2	1	35.1	25	40	30
2-275-2-TS	STAIRCASE	พร	0	72 .0	5	80	5
2-275-2- T S	STAIRCASE	ω5	1	117.0	5	80	5
2-284-2-LW	wr wc & shr	ωз	0	67.5	25	60	25
2-291-4-L	CREW BERTHING	W2	1	138.6	25	40	30
2-291-4-L	CREW BERTHING	W2	- 0	144.0	25	40	30
2-295-2-L	CREW BERTHING	W2	1	95 . 4	25	40	30
2-2 9 5-4-LW	WR WC & SHR	พз	0	45.0	25	60	25
2-311-0-Q	WINCH ROOM	ω6	1	108.0	10	100	5
2-311-2-T	ELEUATOR	W6	0	72 .0	10	100	5
3-271-0-E	AUXILIARY MACHINERY ROOM	F3	0	264.8	25	300	5
1-223-2-LP	PASSAGE	C3	0	160.0	10	100	5
1-271-2-Q	RECOMPRESSION AREA & DIVE	C3	0	31.2	10	100	5
1-287-2-Q	WET LAB NO.2	C3	0	<i>7</i> 3 . 6	10	100	5

Compartment: 2-271-5-L CREW BERTHING

USE: L10 Berthing Space for 10

AREA: 381 sq.ft. DECK HEIGHT: 9.0 ft. VOLUME: 3,435 ca.ft.

UNACCEPTABLE LOSS: Code 7 (5 compartments of one type lost to fire) THRESHOLD FREQUENCY OF UNACCEPTABLE LOSS: 0.1000 per ship year

FREQUENCY OF ESTABLISHED BURNING: 0.0008

FUEL LOAD: 33,538 BTUs/sq.ft.

No. of people x 160/compartment area

UENTILATION: 687 cu ft/min EXCHANGE TIME: 5.0 min.

UENT AREA: 250 sq.in. UENT HEIGHT: 90 in.

FIRE STARTED DUE TO:	i I	I	FRI Time	A	М
Fire Origin	1	10	4	0	30
Thar Failure	ı	5	4	0	50
Dbar Failure	1	0	*	0	0

* calculated as (100 - % Heat Release)/100 X FRI Time or 2 min., whichever is greater.

DETECTION:

Manual:

Occupied 5% of time in port and 20% of time at sea.

Automatic:

Ionization smoke detection system (I)
Photo electric smoke detection system (P)

FIRST AID FIRE PROTECTION:

1 Hand portable monoammonium phosphate fire extinguisher

AUTOMATED FIRE PROTECTION SYSTEMS:

MANUAL FIRE FIGHTING EQUIPMENT:

Compartment: 2-271-5-L CREW BERTHING

Barr (Adjoining C	iers ompts ID and Name)	Mat ID	D∕H	Area- sq.ft.	Tbar	Dbar	%heat rel
2-223-3-Q 2-256-1-TS 2-271-3-LP 2-279-1-TS 2-284-1-LW 2-284-1-LW 2-295-3-L	ELECTRICAL EQUIPMENT STAIRCASE PASSAGE STAIRCASE WR WC & SHR WR WC & SHR CREW BERTHING	₩6 ₩6 ₩2 ₩5 ₩3 ₩3	0 0 1 0 1	144.0 36.0 75.6 45.0 72.0 99.0	10 10 25 5 25 25	100 100 40 80 60 60	5 5 30 5 25 25 30
3-271-0-E	AUXILIARY MACHINERY ROOM	F 3	ō	312.9	2 5	300	5

Compartment: 2-271-6-L CREW BERTHING

USE: L10 Berthing Space for 10

AREA: 310 sq.ft. DECK HEIGHT: 9.0 ft. VOLUME: 2,794 cu.ft.

UNACCEPTABLE LOSS: Code 7 (5 compartments of one type lost to fire) THRESHOLD FREQUENCY OF UNACCEPTABLE LOSS: 0.1000 per ship year

FREQUENCY OF ESTABLISHED BURNING: 0.0008

FUEL LOAD: 41,693 BTUs/sq.ft.

No. of people x 160/compt. area

558 cu ft/min EXCHANGE TIME:
sq.in. UENT HEIGHT: 90 in. UENTILATION: 5.0 min.

UENT AREA: 250 sq.in.

FIRE STARTED DUE TO:	1	I	FRI Time	A	М
Fire Origin		10	4	0	30
Thar Failure	ı	5	4	0	50
Dbar Failure	1	0	*	0	0

* calculated as (100 - % Heat Release)/100 X FRI Time or 2 min., whichever is greater.

DETECTION:

Manual:

Occupied 5% of time in port and 20% of time at sea.

Automatic:

Ionization smoke detection system (I) Photo electric smoke detection system (P)

FIRST AID FIRE PROTECTION:

1 Hand portable monoammonium phosphate fire extinguisher

AUTOMATED FIRE PROTECTION SYSTEMS:

MANUAL FIRE FIGHTING EQUIPMENT:

Compartment: 2-271-6-L CREW BERTHING

sq.ft.			rel
144.0 35.1 61.2 40.5 123.3 90.0 241.7	25 25 25 25	40 80 60 60 40 300	5 30 5 25 25 30 5
	40.5 123.3 90.0	40.5 25 123.3 25 90.0 25 241.7 25	40.5 25 60 123.3 25 60 90.0 25 40 241.7 25 300

Compartment: 2-275-2-TS STAIRCASE

USE: TS Staircases

AREA: 104 sq.ft. DECK HEIGHT: 9.0 ft. VOLUME: 936 cu.ft.

UNACCEPTABLE LOSS: Code 8 (All compartments of one type lost to fire)

THRESHOLD FREQUENCY OF UNACCEPTABLE LOSS: 0.1000 per ship year

FREQUENCY OF ESTABLISHED BURNING: 0.0001

FUEL LOAD: 800 BTUs/sq.ft.

Paint-no carpet or laminate

UENTILATION: 187 cu ft/min EXCHANGE TIME: 5.0 min.

UENT AREA: 10 sq.in. UENT HEIGHT: 1 in.

* calculated as (100 - % Heat Release)/100 X FRI Time or 2 min., whichever is greater.

DETECTION:

Manual:

Occupied 30% of time in port and 50% of time at sea.

Automatic:

AUTOMATED FIRE PROTECTION SYSTEMS:

MANUAL FIRE FIGHTING EQUIPMENT:

Compartment: 2-275-2-TS STAIRCASE

	riers Compts ID and Name)	Mat ID	D∕H	Area- sq.ft.	Tbar	Dbar	%heat rel
2-271-4-LP 2-271-4-LP	PASSAGE PASSAGE	ພ5 ພ5	0 1	72.0 117.0	5 5	80 80	5 5
2-271-6-L 2-284-2-LW	CREW BERTHING UR WC & SHR	ພຣ ພຣ	0	61.2 55.8	5 5	80 80	5 5
2-284-2-LW 3-271-0-E 1-271-2-Q	WR WC & SHR AUXILIARY MACHINERY ROOM RECOMPRESSION AREA & DIVE		0 1 1	72.0 104.0 66.0	5 25 10	80 300 100	5 5 5
1-278-2-TS	STAIRCASE	C3	1	38.0	10	100	5

Compartment: 2-279-1-TS STAIRCASE

USE: TS Staircases

36 sq.ft. DECK HEIGHT: 9.0 ft. UOLUME: 324 cu.ft. AREA:

UNACCEPTABLE LOSS: Code 8 (All compartments of one type lost to fire)

THRESHOLD FREQUENCY OF UNACCEPTABLE LOSS: 0.1000 per ship year

FREQUENCY OF ESTABLISHED BURNING: 0.0001

FUEL LOAD: 800 BTUs/sq.ft. Paint-no carpet or laminate

64 cu ft/min EXCHANGE TIME: 0 sq.in. UENT HEIGHT: 1 in. UENTILATION: 5.0 min.

UENT AREA: 10 sq.in.

FIRE STARTED DUE TO: I FRI A Time Fire Origin 1 100 999 0 30 Thar Failure 1 100 999 0 40

FRI Time or 2 min., whichever is greater.

DETECTION:

Manual:

Occupied 30% of time in port and 50% of time at sea. Automatic:

AUTOMATED FIRE PROTECTION SYSTEMS:

MANUAL FIRE FIGHTING EQUIPMENT:

Compartment: 2-279-1-TS STAIRCASE

Barr (Adjoining C	iers ompts ID and Name)	Mat ID	D/H	Area- sq.ft.	Tbar	Dbar	%heat rel
2-271-3-LP 2-271-3-LP 2-271-5-L 2-284-1-LW 2-284-1-LW 3-271-0-E 1-271-0-Q	PASSAGE PASSAGE CREW BERTHING WR WC & SHR WR WC & SHR AUXILIARY MACHINERY ROOM WET LAB	ա5 ա5 ա5 ա5 ա5 F3 C3	0 1 0 0 0 1	36.0 81.0 45.0 36.0 36.0 36.0	5 5 5 5 25 10	80 80 80 80 80 300	5 5 5 5 5 5 5 5

Compartment: 2-281-1-LW WR WC & SHR

USE: LW Wash room, water closet and shower areas

AREA: 74 sq.ft. DECK HEIGHT: 9.0 ft. VOLUME: 669 cu.ft.

UNACCEPTABLE LOSS: Code 8 (All compartments of one type lost to fire)

THRESHOLD FREQUENCY OF UNACCEPTABLE LOSS: 0.1000 per ship year

FREQUENCY OF ESTABLISHED BURNING: 0.0002

FUEL LOAD: 4,000 BTUs/sq.ft.

UENTILATION: 167 cu ft/min EXCHANGE TIME: 4.0 min.

UENT AREA: 175 sq.in. UENT HEIGHT: 90 in.

FIRE STARTED DUE TO: ı I FRI A - 1 Time I 100 999 0 30 Fire Origin 0 40 Thar Failure i 100 999 Dbar Failure 35 ı 0 0

* calculated as (100 - % Heat Release)/100 \times FRI Time or 2 min., whichever is greater.

DETECTION:

Manual:

Occupied 5% of time in port and 15% of time at sea.

Automatic:

AUTOMATED FIRE PROTECTION SYSTEMS:

MANUAL FIRE FIGHTING EQUIPMENT:

Compartment: 2-281-1-LW WR WC & SHR

Barr (Adjoining C	iers ompts ID and Name)	Mat ID	D/H	Area- sq.ft.	Tbar	Dbar	%heat rel
2-271-1-L 2-271-1-L 2-281-2-LW 2-291-1-LW 3-271-0-E 1-271-0-Q	CREW BERTHING CREW BERTHING WR WC & SHR WR WC & SHR AUXILIARY MACHINERY ROOM WET LAB	W3 W3 W3 W3 F3 C3	1 0 0 0 0	72.0 83.7 83.7 72.0 74.4 74.4	25 25 25 25 25 25	60 60 60 60 300	25 25 25 25 25 5
			1				

Compartment: 2-281-2-LW WR WC & SHR

USE: LW Wash room, water closet and shower areas

AREA: 74 sq.ft. DECK HEIGHT: 9.0 ft. UOLUME: 669 cu.ft.

UNACCEPTABLE LOSS: Code 8 (All compartments of one type lost to fire) THRESHOLD FREQUENCY OF UNACCEPTABLE LOSS: 0.1000 per ship year

FREQUENCY OF ESTABLISHED BURNING: 0.0002

FUEL LOAD: 4,000 BTUs/sq.ft.

UENTILATION: 167 cu ft/min EXCHANGE TIME: 4.0 min.

UENT AREA: 175 sq.in. UENT HEIGHT: 90 in.

* calculated as (100 - % Heat Release)/100 X FRI Time or 2 min., whichever is greater.

DETECTION:

Manual:

Occupied 5% of time in port and 15% of time at sea.

Automatic:

AUTOMATED FIRE PROTECTION SYSTEMS:

MANUAL FIRE FIGHTING EQUIPMENT:

Compartment: 2-281-2-LW WR WC & SHR

Barr (Adjoining C	iers ompts ID and Name)	Mat ID	D/H	Area- sq.ft.	Tbar	Dbar	%heat rel
2-271-2-L 2-271-2-L 2-281-1-LW 2-291-2-LW 3-271-0-E 1-271-0-Q 1-287-2-Q	CREW BERTHING CREW BERTHING WR WC & SHR WR WC & SHR AUXILIARY MACHINERY ROOM WET LAB WET LAB NO.2	W3 W3 W3 F3 C3	1 0 0 0 0 0	72.0 83.7 83.7 72.0 74.4 42.4 32.0	25 25 25 25 25 10	60 60 60 300 100	25 25 25 25 5 5

Compartment: 2-284-1-LW WR WC & SHR

USE: LW Wash room, water closet and shower areas

AREA: 116 sq.ft. DECK HEIGHT: 9.0 ft. UOLUME: 1,044 cu.ft.

UNACCEPTABLE LOSS: Code 8 (All compartments of one type lost to fire)

THRESHOLD FREQUENCY OF UNACCEPTABLE LOSS: 0.1000 per ship year

FREQUENCY OF ESTABLISHED BURNING: 0.0002

FUEL LOAD: 4,000 BTUs/sq.ft.

UENTILATION: 261 cu ft/min EXCHANGE TIME: 4.0 min.

UENT AREA: 200 sq.in. UENT HEIGHT: 90 in.

FIRE STARTED DUE TO: | I FRI A M | Time | | 100 999 0 30 | | Thar Failure | 100 999 0 40 | | Dhar Failure | 35 * 0 0

* calculated as (100 - % Heat Release)/100 X FRI Time or 2 min., whichever is greater.

DETECTION:

Manual:

Occupied 5% of time in port and 15% of time at sea.

Automatic:

AUTOMATED FIRE PROTECTION SYSTEMS:

MANUAL FIRE FIGHTING EQUIPMENT:

Compartment: 2-284-1-LW WR WC & SHR

Barr (Adjoining C	iers ompts ID and Name)	Mat ID	D∕H	Area- sq.ft.	Tbar	Dbar	%heat rel
2-271-3-LP	PASSAGE	W3	0	63.0	25	60	25
2-271-5-L	CREW BERTHING	Ŵ3	1	72.0	25	60	25
2-271-5-L	CREW BERTHING	WЗ	0	99.0	25	60	25
2-279-1-TS	STAIRCASE	W5	0	36.0	5	80	5
2-279-1-TS	STAIRCASE	W5	0	36.0	5	80	5
2-295-1-LW	WR WC & SHR	WЗ	0	90.0	25	60	25
2-295-3-L	CREW BERTHING	ωз	0	18.0	25	60	25
3-271-0-E	AUXILIARY MACHINERY ROOM	F3	0	116.0	25	300	5
1-271-0-Q	WET LAB	C3	0	13.2	10	100	5

Compartment: 2-284-2-LW WR WC & SHR

USE: LW Wash room, water closet and shower areas

AREA: 121 sq.ft. DECK HEIGHT: 9.0 ft. UOLUME: 1,094 cu.ft.

UNACCEPTABLE LOSS: Code 8 (All compartments of one type lost to fire)

THRESHOLD FREQUENCY OF UNACCEPTABLE LOSS: 0.1000 per ship year

FREQUENCY OF ESTABLISHED BURNING: 0.0002

FUEL LOAD: 4,000 BTUs/sq.ft.

UENTILATION: 273 cu ft/min EXCHANGE TIME: 4.0 min.

UENT AREA: 200 sq.in. UENT HEIGHT: 90 in.

FIRE STARTED DUE TO:	 	I	FRI Time	Α	М
Fire Origin	•	100	999	0	30
Thar Failure	- 1	100	999	0	40
Dbar Failure	ĺ	35	*	0	0

* calculated as (100 - % Heat Release)/100 X FRI Time or 2 min., whichever is greater.

DETECTION:

Manual:

Occupied 5% of time in port and 15% of time at sea. Automatic:

AUTOMATED FIRE PROTECTION SYSTEMS:

MANUAL FIRE FIGHTING EQUIPMENT:

Compartment: 2-284-2-LW WR WC & SHR

Barriers (Adjoining Compts ID and Name)		Mat ID	D∕H	Area- sq.ft.	Tbar	Dbar	%heat rel
2-271-4-LP 2-271-6-L 2-271-6-L 2-275-2-TS 2-275-2-TS 2-295-2-L 2-295-4-LW 3-271-0-E 1-271-2-Q 1-278-2-TS	PASSAGE CREW BERTHING CREW BERTHING STAIRCASE STAIRCASE CREW BERTHING WR WC & SHR AUXILIARY MACHINERY ROOM RECOMPRESSION AREA & DIVE STAIRCASE	W3 W3 W5 W5 W3 W3 F3 C3	0 0 1 0 0 0	67.5 40.5 123.3 55.8 72.0 22.5 90.0 121.6 119.6 2.0	25 25 25 5 25 25 25 10	60 60 80 80 60 60 300 100	25 25 25 5 5 25 25 5 5

Compartment: 2-291-1-LW WR WC & SHR

USE: LW Wash room, water closet and shower areas

AREA: 40 sg.ft. DECK HEIGHT: 9.0 ft. VOLUME: 360 cu.ft.

UNACCEPTABLE LOSS: Code 8 (All compartments of one type lost to fire)

THRESHOLD FREQUENCY OF UNACCEPTABLE LOSS: 0.1000 per ship year

FREQUENCY OF ESTABLISHED BURNING: 0.0002

FUEL LOAD: 4,000 BTUs/sq.ft.

90 cu ft/min EXCHANGE TIME: UENTILATION:

UENT HEIGHT: 90 in. UENT AREA: 150 sq.in.

FIRE STARTED DUE TO: i I FRI A Time Fire Origin I 100 999 0 30 1 100 999 0 40 Tbar Failure

FRI Time or 2 min., whichever is greater.

DETECTION:

Manual:

Occupied 5% of time in port and 15% of time at sea.

Automatic:

AUTOMATED FIRE PROTECTION SYSTEMS:

MANUAL FIRE FIGHTING EQUIPMENT:

Compartment: 2-291-1-LW WR WC & SHR

Barr (Adjoining C	iers ompts ID and Name)	Mat ID	D/H	Area- sq.ft.	Tbar	Dbar	%heat rel
2-281-1-LW	WR WC & SHR	₩3	0	72.0	25	60	25
2-291-2-LW	WR WC & SHR	₩3		45.0	25	60	25
2-291-3-L	CREW BERTHING	M3	0	45 . 0	25	60	25
2-291-3-L	CREW BERTHING		1	72 . 0	25	60	25
3-271-0-E	AUXILIARY MACHINERY ROOM	F3	0	40.0	25	300	5
1-271-0-Q	WET LAB	C3	0	32.0	10	100	5
1-295-1-Q	VESTIBULE	C3	0	8.0	10	100	5

Compartment: 2-291-2-LW WR WC & SHR

USE: LW Wash room, water closet and shower areas

AREA: 40 sq.ft. DECK HEIGHT: 9.0 ft. UOLUME: 360 cu.ft.

UNACCEPTABLE LOSS: Code 8 (All compartments of one type lost to fire) THRESHOLD FREQUENCY OF UNACCEPTABLE LOSS: 0.1000 per ship year

FREQUENCY OF ESTABLISHED BURNING: 0.0002

FUEL LOAD: 4,000 BTUs/sq.ft.

90 cu ft/min EXCHANGE TIME: UENTILATION: 4.0 min.

UENT HEIGHT: 90 in. UENT AREA: 150 sq.in.

FIRE STARTED DUE TO: l I FRI Time 1 100 999 0 30 Fire Origin
That Failure

| 100 |
| 35 * 0 0 |
| * calculated as (100 - % Heat Release)/100 X Fire Origin

DETECTION:

Manual:

Occupied 5% of time in port and 15% of time at sea.

Automatic:

AUTOMATED FIRE PROTECTION SYSTEMS:

MANUAL FIRE FIGHTING EQUIPMENT:

Compartment: 2-291-2-LW WR WC & SHR

Barr (Adjoining C	iers ompts ID and Name)	Mat ID	D∕H	Area- sq.ft.	Tbar	Dbar	%heat rel
2-281-2-LW	WR WC & SHR	ШЗ	O	72.0	25	60	25
2-291-1-LW	WR WC & SHR	พิง	Õ	45.0	25	60	25
2-291-4-L	CREW BERTHING	ШЗ	0	45.0	25	60	25
2-291-4-L	CREW BERTHING	WЗ	1	72.0	25	60	25
3-271-0-E	AUXILIARY MACHINERY ROOM	F 3	0	40.0	25	300	5
1-287-2-Q	WET LAB NO.2	C3	0	40.0	10	100	5

COMPARTMENT FIRE SAFETY SUMMARY FOR POLAR ICEBREAKER REPLACEMENT

(drawings dated 5/12/1987)

Compartment: 2-291-3-L CREW BERTHING

USE: L4 Berthing Space for 4

AREA: 206 sq.ft. DECK HEIGHT: 9.0 ft. VOLUME: 1,857 cu.ft.

UNACCEPTABLE LOSS: Code 7 (5 compartments of one type lost to fire) THRESHOLD FREQUENCY OF UNACCEPTABLE LOSS: 0.1000 per ship year

FREQUENCY OF ESTABLISHED BURNING: 0.0008

24,806 BTUs/sq.ft. FUEL LOAD:

No. of people x 160/compartment area

UENTILATION: 371 cu ft/min EXCHANGE TIME: UENT HEIGHT: 90 in. 5.0 min.

FIRE STA	RTED DUE	TO:	1	I	FRI Time	A	М
Fire	Origin		 I	10	3	0	30
	Failure		1	5	3	0	40
Dbar	Failure		i	0	*	0	0

* calculated as (100 - % Heat Release)/100 X FRI Time or 2 min., whichever is greater.

DETECTION:

Manual:

Occupied 5% of time in port and 15% of time at sea.

Automatic:

Ionization smoke detection system (I) Photo electric smoke detection system (P)

FIRST AID FIRE PROTECTION:

1 Hand portable monoammonium phosphate fire extinguisher

AUTOMATED FIRE PROTECTION SYSTEMS:

MANUAL FIRE FIGHTING EQUIPMENT:

Compartment: 2-291-3-L CREW BERTHING

Barr (Adjoining C	iers ompts ID and Name)	Mat ID	D/H	Area- sq.ft.	Tbar	Dbar	%heat rel
2-271-1-L 2-271-3-LP 2-271-3-LP 2-291-1-LW 2-291-1-LW	CREW BERTHING PASSAGE PASSAGE WR WC & SHR WR WC & SHR	W2 W2 W2 W3 W3	0 1 0 0	72.0 138.6 144.0 45.0 72.0	25 25 25 25 25	40 40 40 60	30 30 30 25 25
2-291-4-L 3-271-0-E 1-271-0-Q 1-295-1-Q	CREW BERTHING AUXILIARY MACHINERY ROOM WET LAB VESTIBULE	W2 F3 C3 C3	0 0 0 0	93.6 206.4 32.0 174.4	25 25 10 10	40 300 100 100	30 5 5 5

. 2

Compartment: 2-291-4-L CREW BERTHING

USE: L6 Berthing Space for 6

AREA: 206 sq.ft. DECK HEIGHT: 9.0 ft. VOLUME: 1,857 cu.ft.

UNACCEPTABLE LOSS: Code 7 (5 compartments of one type lost to fire) THRESHOLD FREQUENCY OF UNACCEPTABLE LOSS: 0.1000 per ship year

FREQUENCY OF ESTABLISHED BURNING: 0.0008

FUEL LOAD: 37,209 BTUs/sq.ft.

No. of people x 160/compartment area

UENTILATION: 371 cu ft/min EXCHANGE TIME: 5.0 min. UENT AREA: 275 sq.in. UENT HEIGHT: 90 in.

FIRE STARTED DUE TO: I FRI 1 Time 1 10 4 0 30 Fire Origin 4 0 Thar Failure - 1 5 50 Dbar Failure 0 * 0 8

* calculated as (100 - % Heat Release)/100 X FRI Time or 2 min., whichever is greater.

DETECTION:

Manual:

Occupied 5% of time in port and 20% of time at sea.

Automatic:

Ionization smoke detection system (I)
Photo electric smoke detection system (P)

FIRST AID FIRE PROTECTION:

1 Hand portable monoammonium phosphate fire extinguisher

AUTOMATED FIRE PROTECTION SYSTEMS:

MANUAL FIRE FIGHTING EQUIPMENT:

Compartment: 2-291-4-L CREW BERTHING

Barr (Adjoining C	iers ompts ID and Name)	Mat ID	D/H	Area- sq.ft.	Tbar	Dbar	%heat rel
2-271-2-L 2-271-4-LP 2-271-4-LP 2-291-2-LW 2-291-2-LW 2-291-3-L 3-271-0-E 1-287-2-Q	CREW BERTHING PASSAGE PASSAGE WR WC & SHR WR WC & SHR CREW BERTHING AUXILIARY MACHINERY ROOM WET LAB NO.2	W2 W2 W3 W3 W3 W2 F3 C3	0 1 0 0 1 0 0	72.0 138.6 144.0 45.0 72.0 93.6 206.4 206.4	25 25 25 25 25 25 25 10	40 40 40 60 60 40 300	30 30 30 25 25 30 5

Compartment: 2-295-1-LW WR WC & SHR

USE: LW Wash room, water closet and shower areas

AREA: 50 sq.ft. DECK HEIGHT: 9.0 ft. VOLUME: 450 cu.ft.

UNACCEPTABLE LOSS: Code 8 (All compartments of one type lost to fire)

THRESHOLD FREQUENCY OF UNACCEPTABLE LOSS: 0.1000 per ship year

FREQUENCY OF ESTABLISHED BURNING: 0.0002

FUEL LOAD: 4,000 BTUs/sq.ft.

UENTILATION: 112 cu ft/min EXCHANGE TIME: 4.0 min.

UENT AREA: 175 sq.in. UENT HEIGHT: 90 in.

FIRE STARTED DUE TO:	l	I FR	I A	М	
	i i	Ti	me		
Fire Origin		100 99	9 0	30	
Thar Failure	i	100 99	9 0	40	
Dbar Failure	į į	35	* 0	0	
* (calculated as	(100 - %	Heat	Release)/100) X
1	FRI Time or 2	min., wh	icheve	er is greater	. ·

DETECTION:

Manual:

Occupied 5% of time in port and 15% of time at sea. Automatic:

AUTOMATED FIRE PROTECTION SYSTEMS:

MANUAL FIRE FIGHTING EQUIPMENT:

Compartment:	2-295-1-LW WR WC &	SHR					
	iers compts ID and Name)	Mat ID	D/H	Area- sq.ft.	Tbar	Dbar	%heat rel
0 071 2 17	POSSOCE	112	0	45.0	25	60	25
2-271-3-LP 2-284-1-LW	PASSAGE UR WC & SHR	M3 M3	0	98.0	25 25	60	25 2 5
2-295-3-L	CREW BERTHING	พร	0	45.0	25 25	60	25
2-295-3-L	CREW BERTHING	M3	1	90.0	25	60	25
3-271-0-E	AUXILIARY MACHINERY ROOM	F3	ō	50.0	25	300	5
1-295-1-0	VESTIBULE	C3	Ō	10.0	10	100	5
~							
			1				

Compartment: 2-295-2-L CREW BERTHING

USE: L6 Berthing Space for 6

AREA: 289 sq.ft. DECK HEIGHT: 9.0 ft. VOLUME: 2,603 cu.ft.

UNACCEPTABLE LOSS: Code 7 (5 compartments of one type lost to fire) THRESHOLD FREQUENCY OF UNACCEPTABLE LOSS: 0.1000 per ship year

FREQUENCY OF ESTABLISHED BURNING: 0.0008

FUEL LOAD: 26,549 BTUs/sq.ft.

No. of people x 160/compartment area

UENTILATION: 520 cu ft/min EXCHANGE TIME: 5.0 min.

UENT AREA: 275 sq.in. UENT HEIGHT: 90 in.

FIRE STARTED DUE TO:	! !	I	FRI Time	A	М
Fire Origin		10	4	0	30
Tbar Failure	1	5	4	0	50
Dhar Failure	Į	8	*	0	0

* calculated as (100 - % Heat Release)/100 X FRI Time or 2 min., whichever is greater.

DETECTION:

Manual:

Occupied 5% of time in port and 20% of time at sea.

Automatic:

Ionization smoke detection system (I)
Photo electric smoke detection system (P)

FIRST AID FIRE PROTECTION:

1 Hand portable monoammonium phosphate fire extinguisher

AUTOMATED FIRE PROTECTION SYSTEMS:

MANUAL FIRE FIGHTING EQUIPMENT:

Compartment: 2-295-2-L CREW BERTHING

Barr (Adjoining C	iers ompts ID and Name)	Mat ID	D∕H	Area- sq.ft.	Tbar	Dbar	%heat rel
2-271-4-LP 2-271-6-L 2-284-2-LW 2-295-4-LW 2-295-4-LW 2-311-0-Q 3-271-0-E 1-271-2-Q 1-302-2-LW 1-307-2-R	PASSAGE CREW BERTHING WR WC & SHR WR WC & SHR WR WC & SHR WINCH ROOM AUXILIARY MACHINERY ROOM RECOMPRESSION AREA & DIVE WTR WC & SHR ARCTIC GEAR LOCKERSCIEN	C3	1 0 0 0 1 0 0 0	95.4 90.0 22.5 45.0 90.0 189.0 241.4 100.9 35.0 53.7	25 25 25 25 25 10 25 10	40	30 30 25 25 25 5 5

COMPARTMENT FIRE SAFETY SUMMARY FOR POLAR ICEBREAKER REPLACEMENT

(drawings dated 5/12/1987)

Compartment: 2-295-3-L CREW BERTHING

USE: L6 Berthing Space for 6

AREA: 289 sq.ft. DECK HEIGHT: 9.0 ft. VOLUME: 2,603 ca.ft.

UNACCEPTABLE LOSS: Code 7 (5 compartments of one type lost to fire) THRESHOLD FREQUENCY OF UNACCEPTABLE LOSS: 0.1000 per ship year

FREQUENCY OF ESTABLISHED BURNING: 0.0008

FUEL LOAD: 26,549 BTUs/sq.ft.

No. of people x 160/compartment area

UENTILATION: 520 cu ft/min EXCHANGE TIME:

UENT AREA: 275 sq.in. UENT HEIGHT: 90 in.

FIRE STARTED DUE TO: i I FRI A Time 1 10 4 0 30 Fire Origin 1 4 0 Thar Failure 5 50 Dbar Failure 0

 \star calculated as (100 - % Heat Release)/100 X FRI Time or 2 min., whichever is greater.

DETECTION:

Manual:

Occupied 5% of time in port and 20% of time at sea.

Automatic:

Ionization smoke detection system (I) Photo electric smoke detection system (P)

FIRST AID FIRE PROTECTION:

1 Hand portable monoammonium phosphate fire extinguisher

AUTOMATED FIRE PROTECTION SYSTEMS:

MANUAL FIRE FIGHTING EQUIPMENT:

Compartment: 2-295-3-L CREW BERTHING

Barr (Adjoining C	iers ompts ID and Name)	Mat ID	D∕H	Area- sg.ft.	Tbar	Dbar	%heat rel
2-271-3-LP 2-271-5-L 2-284-1-LW 2-295-1-LW 2-295-1-LW 2-311-0-Q 3-271-0-E 1-295-1-Q	PASSAGE CREW BERTHING WR WC & SHR WR WC & SHR WR WC & SHR WINCH ROOM AUXILIARY MACHINERY ROOM VESTIBULE	W2 W3 W3 W3 W6 F3 C3	1 0 0 0 1 0 0	95.4 94.5 18.0 45.0 90.0 189.0 241.4 21.2	25 25 25 25 25 10 25	40 40 60 60 100 300	30 30 25 25 25 5 5

Compartment: 2-295-4-LW WR WC & SHR

USE: LW Wash room, water closet and shower areas

AREA: 50 sq.ft. DECK HEIGHT: 9.0 ft. VOLUME: 450 cu.ft.

UNACCEPTABLE LOSS: Code 8 (All compartments of one type lost to fire) THRESHOLD FREQUENCY OF UNACCEPTABLE LOSS: 0.1000 per ship year

FREQUENCY OF ESTABLISHED BURNING: 0.0002

FUEL LOAD: 4,000 BTUs/sq.ft.

UENTILATION: 112 cu ft/min EXCHANGE TIME: 4.0 min.

UENT AREA: 175 sq.in. UENT HEIGHT: 90 in.

FIRE STARTED DUE TO: | I FRI A M | Time

Fire Origin | 100 999 0 30 | Thar Failure | 100 999 0 40 | Dhar Failure | 35 * 0 0

* calculated as (100 - % Heat Release)/100 X FRI Time or 2 min., whichever is greater.

DETECTION:

Manual:

Occupied 5% of time in port and 15% of time at sea.

Automatic:

AUTOMATED FIRE PROTECTION SYSTEMS:

MANUAL FIRE FIGHTING EQUIPMENT:

Compartment: 2-295-4-LW WR WC & SHR Barriers Mat D/H Area- Thar Dhar %heat (Adjoining Compts ID and Name) ID sq.ft. rel ______

 2-271-4-LP
 PASSAGE
 W3
 0
 45.0
 25
 60
 25

 2-284-2-LW
 WR WC & SHR
 W3
 0
 90.0
 25
 60
 25

 2-295-2-L
 CREW BERTHING
 W3
 0
 45.0
 25
 60
 25

 2-295-2-L
 CREW BERTHING
 W3
 1
 90.0
 25
 60
 25

 3-271-0-E
 AUXILIARY MACHINERY ROOM F3
 0
 50.0
 25
 300
 5

 1-271-2-Q
 RECOMPRESSION AREA & DIVE C3
 0
 50.0
 10
 100
 5

Compartment: 2-311-0-Q WINCH ROOM

USE: Q Areas usually unoccupied: engineering, electronics, galleys

AREA: 2584 sq.ft. DECK HEIGHT: 9.0 ft. UOLUME: 23,264 cu.ft.

UNACCEPTABLE LOSS: Code 3 (Full compartment lost to fire)

THRESHOLD FREQUENCY OF UNACCEPTABLE LOSS: 0.1000 per ship year

FREQUENCY OF ESTABLISHED BURNING: 0.0033

FUEL LOAD: 12,000 BTUs/sq.ft.

UENTILATION: 11,632 cu ft/min EXCHANGE TIME: 2.0 min.

UENT AREA: 10 sq.in. UENT HEIGHT: 1 in.

FIRE STARTED DUE TO: I I FRI A 1 Time 1 100 999 80 10 Fire Origin 1 100 999 80 Thar Failure 30 Dbar Failure 0 0 0 i * calculated as (100 - % Heat Release)/100 X

* calculated as (100 - % Heat Release)/100 X FRI Time or 2 min., whichever is greater.

DETECTION:

Manual:

Occupied 25% of time in port and 10% of time at sea.

Automatic:

Ionization smoke detection system (I)
Photo electric smoke detection system (P)

FIRST AID FIRE PROTECTION:

3 Hand portable dry chemical fire extinguisher (PKP)

AUTOMATED FIRE PROTECTION SYSTEMS:

1 AFFF (3%) sprinkler system - remotely actuated

MANUAL FIRE FIGHTING EQUIPMENT:

- 1 1 1/2" Seawater hand line with "all purpose nozzle" 50 ft.
- 5 1 1/2" AFFF (3%) hand line with SFL variable nozzle 50 ft.

Compartment: 2-311-0-Q WINCH ROOM

	riers Compts ID and Name)		D/H	Area- sq.ft.	Tbar	Dbar	%heat rel
2-271-3-LP	PASSAGE	we	1	180.0	10	100	5
2-271-4-LP	PASSAGE	ω ₆	1	108.0	10	100	5
2-295-2-L	CREW BERTHING	W6	Ō	189.0	10		5
2-295-3-L	CREW BERTHING	W6	Õ	189.0	10	100	5
	ELEVATOR	W5	0	72.0	5	80	5
2-311-2-T	ELEUATOR	W 5	0	<i>7</i> 5.6	5	80	5
2-311-2-T	ELEUATOR	W 5	2	<i>7</i> 5 . 6	5	80	5
2-343-0-A	HAWSER STORES & SCIENCE C	W2	0	65.7	25	40	30
2-343-0-A	HAWSER STORES & SCIENCE C	W2	1	301.5	25	40	30
2-343-2-A	BOSN'S LOCKER	W2	0	112.5	25	40	30
2-343-3-C	AFT REPAIR NO.2	W2	0	13.5	25	40	30
2-343-3-C	AFT REPAIR NO.2	W2	0	13.5	25	40	3 0
2-343-3-C	AFT REPAIR NO.2	ω2	0	179.1	25	40	30
2-343-3-C	AFT REPAIR NO.2	W2	8	179.1	25	40	30
3-311-0-AA	SCIENCE STORAGE AFT CARG	F3	1	2055.2	25	300	5
3-331-1-Q	UENT TRUNK	F3	0	192.0	25	300	5
1-223-2-LP	PASSAGE	C3	0	32.0	10	100	5
1-287-2-Q	WET LAB NO.2	C3	0	64.0	10	100	5
1-295-1-Q	VESTIBULE	C3	0	176.0	10	100	5
1-307-2-8	ARCTIC GEAR LOCKERSCIEN		0	166.5	10	100	5
1-319-0-LP	PASSAGE	C3	0	344.4	10	100	5
1-326-U-Q	VENT TRUNK	C3	0	128.8		100	5
1-328-1-Q	PORTABLE VAN	C3	0	116.8		100	5
1-328-2-Q	PORTABLE VAN	C3	0	116.8		100	5
1-328-4-Q	PORTABLE VAN	C3	0	13 5 .7	10	100	5

Compartment: 2-311-2-T ELEUATOR

USE: T Elevators, dumb waiters

AREA: 67 sq.ft. DECK HEIGHT: 9.0 ft. VOLUME: 604 cu.ft.

UNACCEPTABLE LOSS: Code 8 (All compartments of one type lost to fire)

THRESHOLD FREQUENCY OF UNACCEPTABLE LOSS: 1.0000 per ship year

FREQUENCY OF ESTABLISHED BURNING: 0.0001

FUEL LOAD: 4,000 BTUs/sq.ft.

Accumulated dust and grease and cable insulation

UENTILATION: 302 cu ft/min EXCHANGE TIME: 2.0 min.

UENT AREA: 10 sq.in. UENT HEIGHT: 1 in.

* calculated as (100 - % Heat Release)/100 X FRI Time or 2 min., whichever is greater.

DETECTION:

Manual:

Occupied 5% of time in port and 5% of time at sea.

Automatic:

AUTOMATED FIRE PROTECTION SYSTEMS:

MANUAL FIRE FIGHTING EQUIPMENT:

Compartment: 2-311-2-T ELEUATOR

	iers Compts ID and Name)	Mat ID	D∕H	Area- sq.ft.	Tbar	Dbar	%heat rel
2-271-4-LP	PASSAGE	W 6	0	72.0	10	100	5
2-311-0-Q	WINCH ROOM	W 5	0	72 .0	5	80	5
2-311-0-Q	WINCH ROOM	W 5	0	<i>7</i> 5 . 6	5	80	5
2-311-0-Q	WINCH ROOM	W 5	2	<i>7</i> 5 . 6	5	80	5
3-311-2-T	ELEVATOR TRUNK	F3	0	67.2	25	300	5
1-287-2-Q	WET LAB NO.2	C3	0	3.2	10	100	5
1-311-2-T	ELEVATOR	C3	0	60.8	10	100	5
1-319-0-LP	PASSAGE	C3	0	3 . 2	10	100	5

Compartment: 2-343-0-A HAWSER STORES & SCIENCE CARGO

USE: AS Storerooms

AREA: 852 sq.ft. DECK HEIGHT: 9.0 ft. UOLUME: 7,674 cu.ft.

UNACCEPTABLE LOSS: Code 4 (2 compartments of one type lost to fire) THRESHOLD FREQUENCY OF UNACCEPTABLE LOSS: 0.3300 per ship year

FREQUENCY OF ESTABLISHED BURNING: 0.0009

FUEL LOAD: 1,280,000 BTUs/sq.ft.

Boxes of flammable stores--Fuel load in psf = $20 \times \text{height of deck}$

767 cu ft∕min **UENTILATION:** EXCHANGE TIME: 10.0 min.

UENT AREA: 2000 sq.in. UENT HEIGHT: 90 in.

FIRE STARTED DUE TO:	1	I	FRI Time	A	М
Fire Origin		30	8	0	30
Thar Failure	1	20	8	0	20
Dhar Failure	1	10	*	O	Ω

* calculated as (100 - % Heat Release)/100 X FRI Time or 2 min., whichever is greater.

DETECTION:

Manual:

Occupied 5% of time in port and 5% of time at sea.

Automatic:

Rate of temperature rise detection system (RR) Photo electric smoke detection system (P)

FIRST AID FIRE PROTECTION:

1 Hand portable monoammonium phosphate fire extinguisher

AUTOMATED FIRE PROTECTION SYSTEMS:

MANUAL FIRE FIGHTING EQUIPMENT:

- 2 1 1/2" Seawater hand line with "all purpose nozzle" 100 ft.
- 1 1 1/2" AFFF (3%) hand line with SFL variable nozzle 50 ft.

Compartment: 2-343-0-A HAWSER STORES & SCIENCE CARGO

Barriers (Adjoining Compts ID and Name)			D/H	Area- sq.ft.	Tbar	Dbar	%heat rel
2-311-0-Q 2-311-0-Q 2-343-2-A 2-343-3-C 2-361-1-E 2-361-2-E 1-326-0-Q 1-328-1-Q 1-328-2-Q 1-328-4-Q	WINCH ROOM WINCH ROOM BOSN'S LOCKER AFT REPAIR NO.2 STEERING GEAR ROOM STEERING GEAR ROOM VENT TRUNK PORTABLE UAN PORTABLE UAN PORTABLE UAN	W2 W2 W2 W6 W6 C3 C3 C3	0 1 1 1 0 1 0 0	65.7 301.5 225.0 233.1 161.1 193.5 16.0 43.2 43.2 21.0	25 25 25 25 10 10 10 10	40 40 100 100	30 30 30 30 55 55 55
1-344-0-K	HAZARDOUS METALS ROOM	C3	0	48.0	10	100	5

Compartment: 2-343-2-A BOSN'S LOCKER

USE: AG Small Storage Spaces -- Gear Lockers

AREA: 302 sq.ft. DECK HEIGHT: 9.0 ft. VOLUME: 2,722 cu.ft.

UNACCEPTABLE LOSS: Code 3 (Full compartment lost to fire)

THRESHOLD FREQUENCY OF UNACCEPTABLE LOSS: 1.0000 per ship year

FREQUENCY OF ESTABLISHED BURNING: 0.0009

FUEL LOAD: 120,000 BTUs/sq.ft.

UENTILATION: 544 cu ft/min EXCHANGE TIME: 5.0 min.

UENT AREA: 10 sq.in. UENT HEIGHT: 1 in.

* calculated as (100 - % Heat Release)/100 X FRI Time or 2 min., whichever is greater.

DETECTION:

Manual:

Occupied 25% of time in port and 50% of time at sea.

Automatic:

Rate of temperature rise detection system (RR) Photo electric smoke detection system (P)

FIRST AID FIRE PROTECTION:

1 Hand portable monoammonium phosphate fire extinguisher

AUTOMATED FIRE PROTECTION SYSTEMS:

MANUAL FIRE FIGHTING EQUIPMENT:

Compartment: 2-343-2-A BOSN'S LOCKER

Barr (Adjoining (Mat ID	D∕H	Area- sq.ft.	Tbar	Dbar	%heat rel	
2-311-0-Q	WINCH ROOM		W2	0	112.5	25	40	30
2-343-0-A	HAWSER STORES & SCIENCE	: C	W2	1	225.0	25	40	30
2-361-2-E	STEERING GEAR ROOM		W6	0	116.1	10	100	5
1-328-4-Q	PORTABLE VAN		C3	0	3.3	10	100	5
				1				

Compartment: 2-343-3-C AFT REPAIR NO.2

USE: C Ship and fire control operating areas normally occupied.

AREA: 446 sq.ft. DECK HEIGHT: 9.0 ft. UOLUME: 4,021 cu.ft.

UNACCEPTABLE LOSS: Code 4 (2 compartments of one type lost to fire) THRESHOLD FREQUENCY OF UNACCEPTABLE LOSS: 0.3300 per ship year

FREQUENCY OF ESTABLISHED BURNING: 0.0012

FUEL LOAD: 32,000 BTUs/sq.ft.

VENTILATION: 804 cu ft/min EXCHANGE TIME: 5.0 min.

UENT AREA: 175 sq.in. UENT HEIGHT: 90 in.

FIRE	STARTE	D DUE	то:	1	I	FRI Time	A	М
1	Fire Or	igin		1	20	6	0	80
7	Thar Fa:	ilure		I	15	6	0	70
ī	Dhar Fa	ilore		1	5	*	n	n

* calculated as (100 - % Heat Release)/100 X FRI Time or 2 min., whichever is greater.

DETECTION:

Manual:

Occupied 5% of time in port and 10% of time at sea.

Automatic:

Rate of temperature rise detection system (RR) Photo electric smoke detection system (P)

FIRST AID FIRE PROTECTION:

1 Hand portable monoammonium phosphate fire extinguisher

AUTOMATED FIRE PROTECTION SYSTEMS:

MANUAL FIRE FIGHTING EQUIPMENT:

Compartment: 2-343-3-C AFT REPAIR NO.2

	iers Compts ID and Name)	Ma [*] ID	t D∕H	Area- sq.ft.	Tbar	Dbar	%heat rel
2-311-0-Q	WINCH ROOM	₩2	0	13.5	25	40	30
2-311-0-Q	WINCH ROOM	₩2		13.5	25	40	30
2-311-0-Q	WINCH ROOM	W2	0	179.1	25	40	30
2-311-0-Q	WINCH ROOM	W2	0	179.1	25	40	30
2-343-0-A	HAWSER STORES & SCIENCE	C W2	1	233.1	25	40	30
2-361-1-E	STEERING GEAR ROOM	W6	0	148.5	10	100	5

Compartment: 2-361-1-E STEERING GEAR ROOM

Compatingui, 5-201-1-5 2158714 and vac.

USE: E Machinery areas which are normally occupied.

AREA: 704 sq.ft. DECK HEIGHT: 9.0 ft. VOLUME: 6,343 cu.ft.

UNACCEPTABLE LOSS: Code 2 (Major item involved in fire)
THRESHOLD FREQUENCY OF UNACCEPTABLE LOSS: 0.0330 per ship year

FREQUENCY OF ESTABLISHED BURNING: 0.0073

FUEL LOAD: 42,816 BTUs/sq.ft.

2 hydraulic pumps at 37 gpm for 6 minutes.

UENTILATION: 2,114 cu ft/min EXCHANGE TIME: 3.0 min.

UENT AREA: 500 sq.in. UENT HEIGHT: 70 in.

FIRE STARTED DUE TO:	ł	I	FRI Time	A	М
Fire Origin		30	 7	60	10
Tbar Failure	1	20	7	20	40
Dhar Failure	1	10	*	0	0

* calculated as (100 - % Heat Release)/100 X FRI Time or 2 min., whichever is greater.

Assumes a fuel or lube oil line rupture No line rupture as adjacent compartment

DETECTION:

Manual:

Occupied 0% of time in port and 15% of time at sea.

Automatic:

Rate of temperature rise detection system (RR) Photo electric smoke detection system (P) Flame detection system (UV or IR) (F)

FIRST AID FIRE PROTECTION:

2 Hand portable dry chemical fire extinguisher (PKP)

AUTOMATED FIRE PROTECTION SYSTEMS:

1 AFFF (3%) sprinkler system - remotely actuated

MANUAL FIRE FIGHTING EQUIPMENT:

- 1 1 1/2" Seawater hand line with "all purpose nozzle" 50 ft.
- 2 1 1/2" AFFF (3%) hand line with SFL variable nozzle 50 ft.

Compartment:	2-361-1-E	Steering Gear Room
--------------	-----------	--------------------

	iers compts ID and Name)	Mat ID	D/H	Area- sq.ft.	Tbar	Dbar	%heat rel
2-343-0-A 2-343-3-C	HAWSER STORES & SCIENCE C	พ6 พ6	0	161.1 148.5	10 10	100 100	5 5
2-361-2-E 2-388-1-A	STEERING GEAR ROOM STOREROOM	W6	0 0	243.9 198.9	10 10	100 100	5 5

COMPARTMENT FIRE SAFETY SUMMARY FOR

POLAR ICEBREAKER REPLACEMENT (drawings dated 5/12/1987)

Compartment: 2-361-2-E STEERING GEAR ROOM

USE: E Machinery areas which are normally occupied.

AREA: 702 sq.ft. DECK HEIGHT: 9.0 ft. VOLUME: 6,325 cu.ft.

UNACCEPTABLE LOSS: Code 2 (Major item involved in fire)

THRESHOLD FREQUENCY OF UNACCEPTABLE LOSS: 0.0330 per ship year

FREQUENCY OF ESTABLISHED BURNING: 0.0073

FUEL LOAD: 42,816 BTUs/sq.ft.

2 hydraulic pumps at 37 gpm for 6 minutes.

UENTILATION: 2,108 cu ft/min EXCHANGE TIME: 3.0 min.

UENT AREA: 500 sq.in. UENT HEIGHT: 70 in.

FIRE STARTED DUE TO:	!	I	FRI Time	A	М
Fire Origin	1	30	7	60	10
Thar Failure	l	20	7	20	40
Dbar Failure	1	10	*	Ω	Ω

* calculated as (100 - % Heat Release)/100 X FRI Time or 2 min., whichever is greater.

Assumes a fuel or lube oil line rupture No line rupture as adjacent compartment

DETECTION:

Manual:

Occupied 0% of time in port and 15% of time at sea.

Automatic:

Rate of temperature rise detection system (RR) Photo electric smoke detection system (P) Flame detection system (UV or IR) (F)

FIRST AID FIRE PROTECTION:

2 Hand portable dry chemical fire extinguisher (PKP)

AUTOMATED FIRE PROTECTION SYSTEMS:

1 AFFF (3%) sprinkler system - remotely actuated

MANUAL FIRE FIGHTING EQUIPMENT:

- 1 1 1/2" Seawater hand line with "all purpose nozzle" 50 ft.
- 2 1 1/2" AFFF (3%) hand line with SFL variable nozzle 50 ft.

Compartment: 2-388-1-A STOREROOM

USE: AS Storerooms

AREA: 288 sq.ft. DECK HEIGHT: 9.0 ft. VOLUME: 2,592 cu.ft.

UNACCEPTABLE LOSS: Code 4 (2 compartments of one type lost to fire) THRESHOLD FREQUENCY OF UNACCEPTABLE LOSS: 0.3300 per ship year

FREQUENCY OF ESTABLISHED BURNING: 0.0009

FUEL LOAD: 1,280,000 BTUs/sq.ft.

Boxes of flammable stores--Fuel load in psf = $20 \times \text{height of deck}$

UENTILATION: 259 cu ft/min EXCHANGE TIME: 10.0 min. UENT AREA: 175 sq.in. UENT HEIGHT: 90 in.

FIRE	STARTED	DUE	TO:	i	I	FRI Time	A	М
F	ire Orio	jin		 I	31	0 5	0	30
7	bar Fail	lure		1	2	0 5	0	20
D	bar Fail	ure		1	1	ე ★	0	0

* calculated as (100 - % Heat Release)/100 X FRI Time or 2 min., whichever is greater.

DETECTION:

Manual:

Occupied 5% of time in port and 5% of time at sea.

Automatic:

Rate of temperature rise detection system (RR) Photo electric smoke detection system (P)

FIRST AID FIRE PROTECTION:

1 Hand portable monoammonium phosphate fire extinguisher

AUTOMATED FIRE PROTECTION SYSTEMS:

MANUAL FIRE FIGHTING EQUIPMENT:

Compartment	2-388-1-A	STOREROOM					
	iers Compts ID and Name)		D/H	Arca- sq.ft.	Tbar	Dbar	%heat rel
2-361-1-E 2-388-2-A	STEERING GEAR RO	OM W6	0	198.9 210.6	10 25	100 40	5 30
			0				

Compartment: 2-388-2-A STOREROOM

USE: AS Storerooms

AREA: 228 sq.ft. DECK HEIGHT: 9.0 ft. VOLUME: 2,052 cu.ft.

UNACCEPTABLE LOSS: Code 4 (2 compartments of one type lost to fire) THRESHOLD FREQUENCY OF UNACCEPTABLE LOSS: 0.3300 per ship year

FREQUENCY OF ESTABLISHED BURNING: 0.0009

FUEL LOAD: 1,280,000 BTUs/sq.ft.

Boxes of flammable stores -- Fuel load in psf = 20 x height of deck

UENTILATION: 205 cu ft/min EXCHANGE TIME: 10.0 min.

UENT AREA: 175 sq.in. UENT HEIGHT: 90 in.

FIRE	STARTED	DUE	TO:	 	 I	FRI Time	A 	М
Ī	Fire Ori	gin		1	 30	5	0	30
•	Cbar Fai	lure		- 1	20	5	0	20
ī	Dhar Fai	lore		ı	10	*	0	0

* calculated as (100 - % Heat Release)/100 X FRI Time or 2 min., whichever is greater.

DETECTION:

Manual:

Occupied 5% of time in port and 5% of time at sea.

Automatic:

Rate of temperature rise detection system (RR) Photo electric smoke detection system (P)

FIRST AID FIRE PROTECTION:

1 Hand portable monoammonium phosphate fire extinguisher

AUTOMATED FIRE PROTECTION SYSTEMS:

MANUAL FIRE FIGHTING EQUIPMENT:

Compartment	2-388-2-A	STOREROOM					
	iers Compts ID and Name:		D/H	Area- sq.ft.	Tbar	Dbar	%heat rel
2-361-2-E 2-388-1-A	STEERING GEAR RO	оом ü 6 ü 2	1 0	198.9 210.6	10 25	100 40	5 30
			1				

Compartment: 3-4-0-A STOREROOM

USE: AS Storerooms

AREA: 87 sq.ft. DECK HEIGHT: 10.0 ft. VOLUME: 875 cu.ft.

UNACCEPTABLE LOSS: Code 4 (2 compartments of one type lost to fire) THRESHOLD FREQUENCY OF UNACCEPTABLE LOSS: 0.3300 per ship year

FREQUENCY OF ESTABLISHED BURNING: 0.0009

FUEL LOAD: 1,600,000 BTUs/sq.ft.

Boxes of flammable stores--Fuel load in psf = 20 x height of deck

UENTILATION: 87 cu ft/min EXCHANGE TIME: UENT AREA: 10 sq.in. UENT HEIGHT: 1 in. 10.0 min.

FIRE STARTED DUE TO: I I FRI A Ī Time Fire Origin 1 30 4 80 30 Tbar Failure 1 20 4 60 20 Dbar Failure ***** 20 10

* calculated as (100 - % Heat Release)/100 X FRI Time or 2 min., whichever is greater.

DETECTION:

Manual:

Occupied 5% of time in port and 5% of time at sea.

Automatic:

Rate of temperature rise detection system (RR)

Photo electric smoke detection system (P)

AUTOMATED FIRE PROTECTION SYSTEMS:

MANUAL FIRE FIGHTING EQUIPMENT:

Compartment: 3-4-0-A

STOREROOM

Barriers (Adjoining Compts ID and Name)		Mat D/H ID		Area- sq.ft.	Tbar	Dbar	%heat rel
3-22-0-A 3-22-0-A 2-22-0-A 2-4-0-A	STOREROOM STOREROOM STOREROOM STOREROOM	W2 W2 C3 C3	0 0 0 1	78.0 78.0 1.3 86.2	25 25 10 10	40 40 100 100	30 30 5 5
			 1				

Compartment: 3-22-0-A STOREROOM

USE: AS Storerooms

AREA: 740 sq.ft. DECK HEIGHT: 10.0 ft. VOLUME: 7,406 cu.ft.

UNACCEPTABLE LOSS: Code 4 (2 compartments of one type lost to fire) THRESHOLD FREQUENCY OF UNACCEPTABLE LOSS: 0.3300 per ship year

FREQUENCY OF ESTABLISHED BURNING: 0.0009

FUEL LOAD: 1,600,000 BTUs/sq.ft.

Boxes of flammable stores -- Fuel load in psf = 20 x height of deck

UENTILATION: 740 cu ft/min EXCHANGE TIME: 10.0 min.

UENT AREA: 20 sq.in. UENT HEIGHT: 2 in.

FIRE STARTED DUE 1	: 0:	1	I	FRI Tim	• •	M	
Fire Origin		1	30	6	70	40	
Tbar Failure		1	20	6	5 0	6 0	
Dbar Failure		1	10	*	10	0	
	* calculated	85	(100	- %	Heat	Release	1)/

* calculated as (100 - % Heat Release)/100 X FRI Time or 2 min., whichever is greater.

DETECTION:

Manual:

Occupied 5% of time in port and 5% of time at sea.

Automatic:

Rate of temperature rise detection system (RR) Photo electric smoke detection system (P)

FIRST AID FIRE PROTECTION:

AUTOMATED FIRE PROTECTION SYSTEMS:

1 Seawater sprinkler system - remotely activated

MANUAL FIRE FIGHTING EQUIPMENT:

Compartment: 3-22-0-A STOREROOM

	riers Compts ID and Name)	Mad ID	D∕H	Area- sq.ft.	Tbar	Dhar	%heat rel
3-4-0-A	STOREROOM	W2	0	78 . 0	2 5	40	30
3-4-0-A	STOREROOM	W2	0	<i>7</i> 8.0	25	40	30
3-46-1-V	UOID SPACE	W6	0	163.0	10	100	5
3-46-2-U	UOID SPACE	W6	0	163.0	10	100	5
3-49-0-AA	CARGO HOLD	W6	0	6 7.0	10	100	5
3-49-0-AA	CARGO HOLD	W6	0	67. 0	10	100	5
4-31-0-W	TRIM TANK	F 3	0	196.5	25	300	5
2-22-0-A	STOREROOM	C3	1	738.6	10	100	5
2-49-0-AA	SCIENCE STORAGEUPPE	R CA C3	0	1.0	10	100	5

COMPARTMENT FIRE SAFETY SUMMARY FOR POLAR ICEBREAKER REPLACEMENT

(drawings dated 5/12/1987)

Compartment: 3-49-0-AA CARGO HOLD

USE: AA Cargo Holds

AREA: 1548 sq.ft. DECK HEIGHT: 10.0 ft. UOLUME: 15,480 cu.ft.

UNACCEPTABLE LOSS: Code 3 (Full compartment lost to fire)

THRESHOLD FREQUENCY OF UNACCEPTABLE LOSS: 0.1000 per ship year

FREQUENCY OF ESTABLISHED BURNING: 0.0009

FUEL LOAD: 2,000,000 BTUs/sq.ft.

Loaded cardboard boxes -- Fuel load in psf = 25 x height of deck.

VENTILATION: 1,548 cu ft/min EXCHANGE TIME: 10.0 min.

VENT HEIGHT: 20 in. UENT AREA: 180 sq.in.

FIRE STARTED DUE TO:	1	Ι	FRI Time	A	М
Fire Origin		30	11	70	40
Tbar Failure	1	20	11	50	60
Dbar Failure	1	10	*	10	0

* calculated as (100 - % Heat Release)/100 X FRI Time or 2 min., whichever is greater.

DETECTION:

Manual:

Occupied 5% of time in port and 10% of time at sea.

Automatic:

Rate of temperature rise detection system (RR) Photo electric smoke detection system (P)

FIRST AID FIRE PROTECTION:

1 Hand portable monoammonium phosphate fire extinguisher

AUTOMATED FIRE PROTECTION SYSTEMS:

1 Seawater sprinkler system - remotely activated

MANUAL FIRE FIGHTING EQUIPMENT:

2 1 1/2" Seawater hand line with "all purpose nozzle" 100 ft.

Compartment: 3-49-0-AA CARGO HOLD

Barri (Adjoining Co	ers mpts ID and Name)	Mat ID	D∕H	Area- sq.ft.	Tbar	Dbar	%heat rel
3-100-0-E 3-22-0-A 3-22-0-A 3-46-1-U 3-46-2-U 4-49-0-E 4-49-1-F 4-49-2-F 4-76-1-F 4-76-2-F 2-49-0-AA	ENGINE ROOM NO.1 STOREROOM STOREROOM VOID SPACE VOID SPACE HYDRAULIC PUMP ROOM OIL TANK OIL TANK OIL TANK OIL TANK SCIENCE STORAGEUPPER CA	W6 W6 W6 F3 F3 F3 F3 C3	0 0 0 0 0	460.0 67.0 566.0 566.0 1535.0 2.8 2.8 3.7 3.7	10 10 10 10 25 25 25 25	100 100 100 100 300 300 300 300	55 5 5555555 5
2-95-2-Q	FWD IC/GYRO ROOM	C3	ō	38.5	10	100	5

COMPARTMENT FIRE SAFETY SUMMARY FOR

POLAR ICEBREAKER REPLACEMENT (drawings dated 5/12/1987)

Compartment: 3-100-0-E ENGINE ROOM NO.1 (THIRD DECK LEVEL) Zero strength barrier below.

USE: E Machinery areas which are normally occupied.

AREA: 3120 sq.ft. DECK HEIGHT: 10.0 ft. UOLUME: 31,201 cu.ft.

UNACCEPTABLE LOSS: Code 3 (Full compartment lost to fire) THRESHOLD FREQUENCY OF UNACCEPTABLE LOSS: 0.0330 per ship year

FREQUENCY OF ESTABLISHED BURNING: 0.0474

FUEL LOAD: 16,353 BTUs/sq.ft.

Cable, paint, etc., (40gpm x 6m/compartment area)

VENTILATION: 31,201 cu ft/min EXCHANGE TIME: 1.0 min.

UENT AREA: 2100 sq.in. UENT HEIGHT: 70 in.

FIRE STARTED DUE TO:	1	I	FRI Time	А	М
Fire Origin	1	0	6	85	10
Tbar Failure	i	5	6	20	40
Dbar Failure	1	5	*	0	0

* calculated as (100 - % Heat Release)/100 X FRI Time or 2 min., whichever is greater.

Assumes a fuel or lube oil line rupture No line rupture as adjacent compartment

DETECTION:

Manual:

Occupied 0% of time in port and 15% of time at sea.

Automatic:

Rate of temperature rise detection system (RR) Photo electric smoke detection system (P) Flame detection system (UV or IR) (F)

FIRST AID FIRE PROTECTION:

4 Hand portable dry chemical fire extinguisher (PKP)

AUTOMATED FIRE PROTECTION SYSTEMS:

1 Halon 1301 total flooding system - remotely actuated

- 1 1 1/2" Seawater hand line with "all purpose nozzle" 50 ft. 2 1 1/2" AFFF (3%) hand line with SFL variable nozzle 50 ft.

Compartment: 3-100-0-E ENGINE ROOM NO.1 (THIRD DECK LEUEL)

	iers Compts ID and Name)	Mat ID	D/H	Area- sq.ft.	Tbar	Dbar	%heat rel
3-100-1-F	OIL TANK	W6	0	271.0	10	100	5
3-100-2-F	OIL TANK	W 6	0	271.0	10	100	5
3-127-1-F	OIL TANK	₩6	0	191.0	10	100	5
3-127-2-F	OIL TANK	W6	0	191.0	10	100	5
3-145-1-V	VOID SPACE	W6	0	153.0	10	100	5 5 5
3-1 4 5-2-F	OIL TANK	W6	0	153.0	10	100	5
3-162-0-E	ENGINE ROOM NO.2	We	0	560.0	10	100	
3-49-0-AA	CARGO HOLD	Me	0	460.0	10	100	5
4-100-0-E	ENGINE ROOM NO.1	F0	0	3120.1	0	0	10 0
2-100-0-LP	Passage	C3	0	662 .8	10	100	5
2-100-1-L	CREW BERTHING	C3	0	2 6 9.3	10	100	5
2-100-2-L	CREW BERTHING	C3	0	3 68 . 9	10	100	5
2-100-3-A	GEAR LOCKER	C3	0	22.0	10	100	5
2-105-1-TS	STAI R CASE	C3	1	38.0	10	100	5 5
2-111-1-LW	wr wc & shr	C3	0	80.7	10	100	5
2-111-2-LW	WR WC & SHR	C3	0	105.0	10	100	5
2-121-1-LW	wr wc & shr	C3	0	1 05 .0	10	100	5
2-121-2-LW	wr wc & Shr	C3	8	105.0	10	100	5
2-121-3-L	CREW BERTHING	C3	0	319. 6	10	100	5
2-121-4-L	CREW BERTHING	C3	0	358.2	10	100	5
2-145-0-TU	UPTAKE 1	¢3	0	512.0	10	100	5
2-145-1-T	MACHINERY HOIST	C3	1	48.0	10	100	5
2-145-2-TS	STAIRCASE	C3	1	66.0	10	100	5
2-154-1-A	STOREROOM	C3	0	46.8	10	100	5
2-157-2-A	GEAR LOCKER	C3	ā	19.2	10	100	5

Compartment: 3-162-0-E ENGINE ROOM NO.2 (THIRD DECK LEUEL)
Zero strength barrier below.

USE: E Machinery areas which are normally occupied.

AREA: 3432 sq.ft. DECK HEIGHT: 10.0 ft. VOLUME: 34,328 cu.ft.

UNACCEPTABLE LOSS: Code 3 (Full compartment lost to fire)
THRESHOLD FREQUENCY OF UNACCEPTABLE LOSS: 0.0330 per ship year

FREQUENCY OF ESTABLISHED BURNING: 0.0474

FUEL LOAD: 15,606 BTUs/sq.ft.

Cable, paint, etc., (40gpm x 6m/compartment area)

UENTILATION: 34,328 cu ft/min EXCHANGE TIME: 1.0 min.

UENT AREA: 2100 sq.in. UENT HEIGHT: 70 in.

FIRE	FIRE STARTED DUE TO:		1	I	FRI Time	A	М	
1	Fire Or	igin			 0	6	85	10
•	ľbar Fa	ilure		1	5	6	20	40
1	Dbar Fa	ilore		t	5	*	Ω	Λ

* calculated as (100 - % Heat Release)/100 X FRI Time or 2 min., whichever is greater.

Assumes a fuel or lube oil line rupture No line rupture as adjacent compartment

DETECTION:

Manual:

Occupied 0% of time in port and 15% of time at sea.

Automatic:

Rate of temperature rise detection system (RR) Photo electric smoke detection system (P) Flame detection system (UV or IR) (F)

FIRST AID FIRE PROTECTION:

4 Hand portable dry chemical fire extinguisher (PKP)

AUTOMATED FIRE PROTECTION SYSTEMS:

1 Halon 1301 total flooding system - remotely actuated

- 1 1 1/2" Seawater hand line with "all purpose nozzle" 50 ft.
- 2 1 1/2" AFFF (3%) hand line with SFL variable nozzle 50 ft.

Compartment: 3-162-0-E ENGINE ROOM NO.2 (THIRD DECK LEVEL)

COMPARTMENT FIRE SAFETY SUMMARY FOR POLAR ICEBREAKER REPLACEMENT

(drawings dated 5/12/1987)

Compartment: 3-223-0-E MOTOR GENERATOR ROOM

USE: E Machinery areas which are normally occupied.

AREA: 2688 sq.ft. DECK HEIGHT: 10.0 ft. UOLUME: 26,880 cq.ft.

UNACCEPTABLE LOSS: Code 2 (Major item involved in fire)

THRESHOLD FREQUENCY OF UNACCEPTABLE LOSS: 0.0330 per ship year

FREQUENCY OF ESTABLISHED BURNING: 0.0031

FUEL LOAD: 18,428 BTUs/sq.ft.

Cables, paint, etc, (10gpm x 6m/compartment area)

UENTILATION: 8,960 cu ft/min EXCHANGE TIME: 3.0 min.

UENT HEIGHT: 70 in. VENT AREA: 500 sq.in.

FIRE STARTED DUE TO:	 	I	FRI Time	A	M
Fire Origin	1	0	5	80	10
Thar Failure	t	5	5	15	40
Dbar Failure	ŀ	0	*	0	0

* calculated as (100 - % Heat Release)/100 X FRI Time or 2 min., whichever is greater.

Assumes a fuel or lube oil line rupture No line rupture as adjacent compartment

DETECTION:

Manual:

Occupied 0% of time in port and 15% of time at sea.

Automatic:

Rate of temperature rise detection system (RR) Photo electric smoke detection system (P) Flame detection system (UV or IR) (F)

FIRST AID FIRE PROTECTION:

- 1 Hand portable dry chemical fire extinguisher (PKP)
- 6 Hand portable Halon fire extinguisher (1301)

AUTOMATED FIRE PROTECTION SYSTEMS:

- 1 1 1/2" Seawater hand line with "all purpose nozzle" 50 ft.
- 2 1 1/2" AFFF (3%) hand line with SFL variable nozzle 50 ft.

Compartment: 3-223-0-E MOTOR GENERATOR ROOM

Barri (Adjoining Co	iers ompts ID and Name)	Mat ID	D∕H	Area- sq.ft.	Tbar	Dbar	%heat rel
3-162-0-E	ENGINE ROOM NO.2	ω 6	0	560.0	10	100	5
3-223-1-F	OIL TANK	we	Õ	244.0	10		5
3-223-2-F	OIL TANK	₩6	0	244.0	10	100	5
3-247-1-F	OIL TANK	Me	0	236.0	10	100	5
3-247-2-F	OIL TANK	W6	0	236.0	10	100	5
3-271-0-E	AUXILIARY MACHINERY ROOM	₩6	0	560.0	10	100	5
4-223-0-E	MOTOR ROOM	F3	2	2606.9	25	300	5
4-262-0-W	GREY/BLK WTR HOLDING TANK	F3	0	81.1	25	300	5
2-223-0-C	ENGINEERING CONTROL CENTE	C3	0	1661.9	10	100	5
2-223-1-LP	PAS S AG E	C3	0	206.0	10	100	5
2-223-2-LP	PASSAGE	C3	. 0	192.0	10	100	5
2-251-2-A	BATTERY ROOM	C3	0	35.0	10	100	5
2-256-1-TS	STAIRCASE	C3	1	56.4	10	100	5
2-256-2-TS	STAIRCASE	C3	1	105.7	10	100	5
2-262-1-Q	IC/GYRO ROOM	C3	0	242.3	10	100	5
2-26 2 -2-Q F	FAN ROOM	C3	0	188.7	10	100	5

Compartment: 3-271-0-E AUXILIARY MACHINERY ROOM

USE: E Machinery areas which are normally occupied.

AREA: 3179 sq.ft. DECK HEIGHT: 10.0 ft. VOLUME: 31,798 cu.ft.

UNACCEPTABLE LOSS: Code 3 (Full compartment lost to fire)

THRESHOLD FREQUENCY OF UNACCEPTABLE LOSS: 0.1000 per ship year

FREQUENCY OF ESTABLISHED BURNING: 0.0033

FUEL LOAD: 17,026 BTUs/sq.ft.

Cables, paint, etc., (Sgpm x 6m/compartment area)

UENTILATION: 15,899 cu ft/min EXCHANGE TIME: 2.0 min.

UENT AREA: 500 sq.in. UENT HEIGHT: 70 in.

	I 	FRI Time	A 	M
1	0	_		10
1	0 0	⊃ *	20	40
	 	I 	Time	Time 0 5 85

* calculated as (100 - % Heat Release)/100 X FRI Time or 2 min., whichever is greater.

Assumes a fuel or lube oil line rupture No line rupture as adjacent compartment

DETECTION:

Manual:

Occupied 0% of time in port and 15% of time at sea.

Automatic:

Rate of temperature rise detection system (RR)

Photo electric smoke detection system (P)

Flame detection system (UV or IR) (F)

FIRST AID FIRE PROTECTION:

4 Hand portable dry chemical fire extinguisher (PKP)

AUTOMATED FIRE PROTECTION SYSTEMS:

1 AFFF (3%) sprinkler system - remotely actuated

- 1 1 1/2" Seawater hand line with "all purpose nozzle" 50 ft.
- 2 1 1/2" AFFF (3%) hand line with SFL variable nozzle 50 ft.

Compartment: 3-271-0-E AUXILIARY MACHINERY ROOM

Barr (Adjoining (riers Compts ID and Name)		Mat ID	D/H	Area- sq.ft.		Dbar	%heat rel
3-223-0-E	MOTOR GENERATOR ROOM		W6	0	560.0	10	100	5
3-247-1-F			ω ₆	Ō	135.0			5
3-247-2-F			W6	Ō	135.0			5
3-311-0-AA		CARG	⊌6	0	300.0		_	5
3-311-0-AA	SCIENCE STORAGE AFT	CARG	₩6	0	380.0	10	100	5
3-311-2-T	ELEVATOR TRUNK		W6	0	80.0	10	100	5 5
4-271-0-E	PUMP ROOM		F 3	1	1615.9	25	300	5
4-271-1-F	LUBE OIL		F3	0	18 0 .0	25	300	5
4-271-2-F	LUBE OIL		F3	0	180. 0	25	300	5
4-271-3-J	JP-5 STORAGE		F3	0	295.4		300	5
4-271- 4 -J	JP-5 STORAGE		F3	0	295.4	2 5	30 0	5
4-299-1-J	JP-5 SERVICE		F3	0	43.7	25	30 0	5
	JP-5 SERVICE		F3	0	4 3 . 7	2 5		5
	JP-5 STORAGE		F3	0	81 .9	25		5
	JP-5 STORAGE		F3	0	81.9	2 5		5
	CREW BERTHING		C3	0	245.6			5
	CREW BERTHING		C3	0	245.6	10		5
2-271-3-LP	PASSAGE		C3	0	2 67 .2	10		5
2-271-4-LP	PASSAGE		¢3	0	264 B	1 0		5
2-271-5-L	CREW BERTHING		C3	0	312.9	10		5
	CREW BERTHING		C3	0	241.7			5
2-2 75-2-TS			C 3	1	104.0			5
	STAIRCASE		C3		36.0			5
2- 2 81-1-LW	wr wc & shr		C3	0	74. 4		100	5
2-281-2-LW	WR WC & SHR		C3	0	74.4	1.0		5
2-284-1-LW	wr wc & shr		C3	0	116.0	10	100	5
2-2 84 -2-LW	wr wc & shr		C3	0	121.6	10	100	5
2-2 9 1-1-LW	wr wc & shr		C3	0	40.0		10 0	5
2-29 1-2 -LW	WR WC & SHR		C3	0	40.0			5
2-291-3-L			C3	0	206.4			5
	CREW BERTHING		C3	0	206.4			5
2-295-1-LW	WR WC & SHR CREW BERTHING CREW BERTHING WR WC & SHR		C3	0	50.0	10		5
2-2 9 5-2-L	CREW BERTHING		C3	0	241.4			5
2-295- 3 -L	CREW BERTHING		C3	0	241.4	10	100	5
2-295-4-LW	wr wc & shr		C3	0	50.0	10	10 0	5

Compartment: 3-311-2-T ELEVATOR TRUNK

USE: T Elevators, dumb waiters

AREA: 67 sq.ft. DECK HEIGHT: 10.0 ft. VOLUME: 672 cu.ft.

UNACCEPTABLE LOSS: Code 8 (All compartments of one type lost to fire)

THRESHOLD FREQUENCY OF UNACCEPTABLE LOSS: 1.0000 per ship year

FREQUENCY OF ESTABLISHED BURNING: 0.0001

FUEL LOAD: 4,000 BTUs/sq.ft.

Accumulated dust and grease and cable insulation

UENTILATION: 336 cu ft/min EXCHANGE TIME: 2.0 min.

UENT AREA: 10 sq.in. UENT HEIGHT: 1 in.

FIRE STARTED DUE TO: | I FRI A M | Time | Time | 100 999 0 30 | Thar Failure | 100 999 0 40 | Dhar Failure | 30 * 0 0 | * calculated as (100 - % Heat Release)/100 X

* calculated as (100 - % Heat Release)/100 X FRI Time or 2 min., whichever is greater.

DETECTION:

Manual:

Occupied 5% of time in port and 5% of time at sea.

Automatic:

AUTOMATED FIRE PROTECTION SYSTEMS:

MANUAL FIRE FIGHTING EQUIPMENT:

2 1 1/2" Seawater hand line with "all purpose nozzle" 100 ft.

FOR POLAR ICEBREAKER REPLACEMENT (drawings dated 5/12/87)

Compartment: 3-311-2-T ELEVATOR TRUNK

Barr (Adjoining C	iers ompts ID and Name)	Mat ID	D∕H	Area- sq.ft.	Tbar	Dbar	%heat rel
3-271-0-E 3-311-0-AA 3-311-0-AA 3-311-0-AA 4-311-0-W 2-311-2-T	AUXILIARY MACHINERY ROOM SCIENCE STORAGEAFT CARG SCIENCE STORAGEAFT CARG SCIENCE STORAGEAFT CARG BILGE TANK ELEVATOR	we	0 0 2 0 0	80.0 80.0 84.0 84.0 67.2	10 10 10 10 25	100 100 100 100 300	5 5 5 5 5 5

Compartment: 3-311-0-AA SCIENCE STORAGE--AFT CARGO HOLD

USE: AA Cargo Holds

AREA: 2058 sq.ft. DECK HEIGHT: 10.0 ft. UOLUME: 20,583 ca.ft.

UNACCEPTABLE LOSS: Code 3 (Full compartment lost to fire)

THRESHOLD FREQUENCY OF UNACCEPTABLE LOSS: 0.1000 per ship year

FREQUENCY OF ESTABLISHED BURNING: 0.0009

FUEL LOAD: 1,600,000 BTUs/sq.ft.

Loaded cardboard boxes -- Fuel load in psf = 25 x height of deck.

VENTILATION: 2,058 cu ft/min EXCHANGE TIME: 10.0 min.

UENT AREA: 100 sq.in. UENT HEIGHT: 20 in.

FIRE STARTED DUE TO:	I FRI A	M
Fire Origin	1 30 12 70	40
Tbar Failure	l 20 12 50	60
Dhar Failure	I 10 * 10	0

* calculated as (100 - % Heat Release)/100 X FRI Time or 2 min., whichever is greater.

DETECTION:

Manual:

Occupied 5% of time in port and 10% of time at sea.

Automatic:

Rate of temperature rise detection system (RR) Photo electric smoke detection system (P)

FIRST AID FIRE PROTECTION:

- 1 Hand portable monoammonium phosphate fire extinguisher
- 1 Hand portable carbon dioxide fire extinguisher

AUTOMATED FIRE PROTECTION SYSTEMS:

1 Seawater sprinkler system - remotely activated

MANUAL FIRE FIGHTING EQUIPMENT:

2 1 1/2" Seawater hand line with "all purpose nozzle" 100 ft.

Barriers (Adjoining Compts ID and Name)			D∕H	Area- sq.ft.	Tbar Dbar		%heat rel
3-271-0-E	AUXILIARY MACHINERY ROOM	W6	0	300.0	10	100	5
3-271-0-E	AUXILIARY MACHINERY ROOM	W6	0	380.0	10	100	5
3-311-2-T	ELEVATOR TRUNK	พ6	0	80.0	10	100	5
3-311-2-T	ELEVATOR TRUNK	₩6	2	84.0	10	100	5
3-311-2-T	ELEVATOR TRUNK	ω6	0	84.0	10	100	5
3-331-1-0	UENT TRUNK	₩ 6	0	120.0	10	100	5
3-331-1-Q	VENT TRUNK	W6	0	120.0	10	100	5
3-331-1-Q	VENT TRUNK	W6	0	160.0	10	100	5
4-311-0-W	BILGE TANK	F3	0	1242.0	25	300	5
2-311-0-Q	WINCH ROOM	C3	1	2055.2	10	100	5

Compartment: 3-331-1-Q UENT TRUNK

USE: Q Areas usually unoccupied: engineering, electronics, galleys

AREA: 192 sq.ft. DECK HEIGHT: 10.0 ft. VOLUME: 1,920 cq.ft.

UNACCEPTABLE LOSS: Code 8 (All compartments of one type lost to fire)

THRESHOLD FREQUENCY OF UNACCEPTABLE LOSS: 0.0000 per ship year

FREQUENCY OF ESTABLISHED BURNING: 0.0000

FUEL LOAD:

0 BTUs/sq.ft.

UENTILATION: U cu ...
OPEA: sq.in. 0 cu ft/min EXCHANGE TIME: 0.0 min.

VENT HEIGHT: 0 in.

FIRE STARTED DUE TO: I FRI A Time I 0 I 0 0 20 0 40 Fire Origin Thar Failure Dbar Failure **+** 0 0 0

* calculated as (100 - % Heat Release)/100 X FRI Time or 2 min., whichever is greater.

DETECTION:

Manual:

Occupied 25% of time in port and 50% of time at sea.

Automatic:

AUTOMATED FIRE PROTECTION SYSTEMS:

MANUAL FIRE FIGHTING EQUIPMENT:

2 1 1/2" Seawater hand line with "all purpose nozzle" 100 ft.

 Compartment: 3-331-1-Q
 UENT TRUNK

 Barriers
 Mat D/H Area Toar Doar theat

 (Adjoining Compts ID and Name)
 ID sq.ft.
 rel

 3-311-0-AA
 SCIENCE STORAGE--AFT CARG W6 0 120.0 10 100 5

 3-311-0-AA
 SCIENCE STORAGE--AFT CARG W6 0 120.0 10 100 5

 3-311-0-AA
 SCIENCE STORAGE--AFT CARG W6 0 160.0 10 100 5

 4-311-0-W
 BILGE TANK
 F3 0 171.2 25 300 5

 2-311-0-Q
 WINCH ROOM
 C3 0 192.0 10 100 5

Compartment: 4-49-0-E HYDRAULIC PUMP ROOM

USE: E Machinery areas which are normally occupied.

AREA: 1535 sq.ft. DECK HEIGHT: 10.0 ft. UOLUME: 15,350 cq.ft.

UNACCEPTABLE LOSS: Code 8 (All compartments of one type lost to fire) THRESHOLD FREQUENCY OF UNACCEPTABLE LOSS: 0.0330 per ship year

FREQUENCY OF ESTABLISHED BURNING: 0.0020

FUEL LOAD: 18,126 BTUs/sq.ft.

Cables, paint, etc. (5gpm x 6m/compartment area)

UENTILATION: 2,558 cu ft/min EXCHANGE TIME: 6.8 min.

UENT AREA: 500 sq.in. UENT HEIGHT: 70 in.

FIRE STARTED DUE TO:	l 1	I	FRI Time	A	М
Fire Origin		0	4	0	5
Tbar Failure	1	5	4	0	30
Dbar Failure	1	0	*	0	0

* calculated as (100 - % Heat Release)/100 X FRI Time or 2 min., whichever is greater.

Assumes a fuel or lube oil line rupture No line rupture as adjacent compartment

DETECTION:

Manual:

Occupied 0% of time in port and 15% of time at sea.

Automatic:

Rate of temperature rise detection system (RR) Photo electric smoke detection system (P) Flame detection system (UV or IR) (F)

FIRST AID FIRE PROTECTION:

1 Hand portable dry chemical fire extinguisher (PKP)

AUTOMATED FIRE PROTECTION SYSTEMS:

- 1 1 1/2" Seawater hand line with "all purpose nozzle" 50 ft.
- 1 1 1/2" AFFF (3%) hand line with SFL variable nozzle 50 St.
- 1 1 1/2" AFFF (3%) hand line with SFL variable nozzle 100 ft.

Compartment: 4-49-0-E HYDRAULIC PUMP ROOM

Barr (Adjoining C	iers ompts ID and Name)	Mat ID	D/H	Area- sq.ft.	Tbar	Dbar	%heat rel
4-100-0-E 4-31-0-W 4-31-0-W 4-49-1-F 4-49-2-F 4-76-2-F 5-49-0-E 5-76-0-E 5-76-1-F 5-76-2-F 3-49-0-AA		36 36 36 36 36 37 37 37 37 37 37 37 37 37 37 37 37 37	0 0 0 0 0 0 0	460.0 67.0 67.0 240.0 240.0 326.0 326.0 467.6 696.0 161.6 1535.0	10 10 10 10 10 10 25 25 25 25	100 100 100 100 100 100 300 300 300 300	555555555555

COMPARTMENT FIRE SAFETY SUMMARY FOR POLAR ICEBREAKER REPLACEMENT

POLAR ICEBREAKER REPLACEMENT (drawings dated 5/12/1987)

Compartment: 4-100-0-E ENGINE ROOM NO.1 (FIRST PLATFORM LEVEL)

Zero strength barriers above and below.

USE: E Machinery areas which are normally occupied.

AREA: 3126 sq.ft. DECK HEIGHT: 10.0 ft. VOLUME: 31,263 cu.ft.

UNACCEPTABLE LOSS: Code 3 (Full compartment lost to fire)
THRESHOLD FREQUENCY OF UNACCEPTABLE LOSS: 0.0330 per ship year

FREQUENCY OF ESTABLISHED BURNING: 0.0474

FUEL LOAD: 16,352 BTUs/sq.ft.

Cables, paint, etc., (40gpm x 6m/compartment area)

UENTILATION: 31,263 cu ft/min EXCHANGE TIME: 1.0 min.

UENT AREA: 2100 sq.in. UENT HEIGHT: 70 in.

FIRE STARTED DUE TO:	1	I	FRI Time	A	М
Fire Origin		0	6	85	10
Tbar Failure	l l	5	6	20	40
Dbar Failure	1	5	*	0	0

* calculated as (100 - % Heat Release)/100 X FRI Time or 2 min., whichever is greater.

Assumes a fuel or lube oil line rupture No line rupture as adjacent compartment

DETECTION:

Manual:

Occupied 0% of time in port and 15% of time at sea.

Automatic:

Rate of temperature rise detection system (RR) Photo electric smoke detection system (P) Flame detection system (UV or IR) (F)

FIRST AID FIRE PROTECTION:

- 2 Hand portable carbon dioxide fire extinguisher
- 4 Hand portable dry chemical fire extinguisher (PKP)

AUTOMATED FIRE PROTECTION SYSTEMS:

1 Halon 1301 total flooding system - remotely actuated

- 1 1 1/2" Seawater hand line with "all purpose nozzle" 50 ft.
- 2 1 1/2" AFFF (3%) hand line with SFL variable nozzle 50 ft.

Compartment: 4-162-0-E ENGINE ROOM NO.2 (FIRST PLATFORM LEVEL)

Zero strength barriers above and below.

USE: E Machinery areas which are normally occupied.

AREA: 3432 sq.ft. DECK HEIGHT: 10.0 ft. VOLUME: 34,328 cu.ft.

UNACCEPTABLE LOSS: Code 3 (Full compartment lost to fire)
THRESHOLD FREQUENCY OF UNACCEPTABLE LOSS: 0.0330 per ship year

FREQUENCY OF ESTABLISHED BURNING: 0.0474

FUEL LOAD: 15,606 BTUs/sq.ft.

Cables, paint, etc., (40gpm x 6m/compartment area)

UENTILATION: 34,328 cu ft/min EXCHANGE TIME: 1.0 min.

UENT AREA: 2100 sq.in. UENT HEIGHT: 70 in.

FIRE STARTED DUE TO:	i f	I	FRI Time	A	М
Fire Origin		0	6	85	10
Tbar Failure	ı	15	6	20	40
Dbar Failure	1	5	*	0	0

* calculated as (100 - % Heat Release)/100 X FRI Time or 2 min., whichever is greater.

Assumes a fuel or lube oil line rupture No line rupture as adjacent compartment

DETECTION:

Manual:

Occupied 0% of time in port and 15% of time at sea.

Automatic:

Rate of temperature rise detection system (RR) Photo electric smoke detection system (P) Flame detection system (UV or IR) (F)

FIRST AID FIRE PROTECTION:

- 2 Hand portable carbon dioxide fire extinguisher
- 4 Hand portable dry chemical fire extinguisher (PKP)

AUTOMATED FIRE PROTECTION SYSTEMS:

1 Halon 1301 total flooding system - remotely actuated

- 1 1 1/2" Seawater hand line with "all purpose nozzle" 50 ft.
- 2 1 1/2" AFFF (3%) hand line with SFL variable nozzle 50 ft.

Compartment:	ENGINE	ROOM	NO . 2	(FIRST	PLATFO	RM LE	VEL)	
	iers Compts ID and Name)		Mat ID	D∕H	Area- sq.ft		Dbar	%heat rel
4-100-0-E	ENGINE ROOM NO.1		6	0	560.0	10	100	5
4-162-1-F	OIL TANK		W6	0	613.0	10	100	5
4-162-2-F	OIL TANK		W6	0	613.0	10	100	5
4-223-0-E	MOTOR ROOM		₩ 6	0	56 0.0	10	100	5
5-162-0-E	ENGINE ROOM NO.2		FO	0	2573.3	0	0	100
5-162-1-F	OIL TANK		F 3	0	429.1	25	300	5
5-162-2-F	OIL TANK		F3	0	42 9 .1	25	300	5
3-162-0-E	ENGINE ROOM NO.2		CO	0	3432.8	0	0	100
				0				

Compartment: 4-223-0-E MOTOR ROOM (FIRST PLATFORM LEUEL) Zero strength barrier below.

USE: E Machinery areas which are normally occupied.

AREA: 2606 sq.ft. DECK HEIGHT: 10.0 ft. VOLUME: 26,069 cu.ft.

UNACCEPTABLE LOSS: Code 2 (Major item involved in fire)

THRESHOLD FREQUENCY OF UNACCEPTABLE LOSS: 0.0330 per ship year

FREQUENCY OF ESTABLISHED BURNING: 0.0031

FUEL LOAD: 18,428 BTUs/sq.ft.

Cables, paint, etc, (10gpm x 6m/compartment area)

UENTILATION: 4,344 cu ft/min EXCHANGE TIME: UENT HEIGHT: 70 in.

6.0 min.

VENT AREA: 1000 sq.in.

FIRE STA	RTED DUE	TO:	1	I	FRI Time	А	М
Fire	Origin		1	0	6	80	10
	Failure		j	5	6	15	40
Dbar	Failure		1	0	*	0	0
			- 1.6-1	/100	a. 11.	4	D 1 -

* calculated as (100 - % Heat Release)/100 X FRI Time or 2 min., whichever is greater.

Assumes a fuel or lube oil line rupture No line rupture as adjacent compartment

DETECTION:

Manual:

Occupied 0% of time in port and 15% of time at sea.

Automatic:

Rate of temperature rise detection system (RR) Photo electric smoke detection system (P) Flame detection system (UV or IR) (F)

FIRST AID FIRE PROTECTION:

4 Hand portable carbon dioxide fire extinguisher

AUTOMATED FIRE PROTECTION SYSTEMS:

1 Halon 1301 total flooding system - remotely actuated

- 1 1 1/2" Seawater hand line with "all purpose nozzle" 50 ft.
- 2 1 1/2" AFFF (3%) hand line with SFL variable nozzle 50 ft.

Compartment: 4-223-0-E MOTOR ROOM (FIRST PLATFORM LEVEL)

	riers Compts ID and Name)	Mat ID	D/H	Area- sq.ft.	Tbar	Dbar	%heat rel
4-162-0-E	ENGINE ROOM NO.2	₩6	0	560.0	10	100	5
4-223-1-F	OIL TANK	W6	C	480. 0	10	100	5
4-223-2-F	OIL TANK	₩6	0	480.0	10	100	5
4-262-0-W	GREY/BLK WTR HOLDING TAN	K W6	0	90. 0	10	100	5
4-262-0-W	GREY/BLK WTR HOLDING TAN	K W6	0	೨೦.೦	10	100	5
4-262-0-W	GREY/BLK WTR HOLDING TAN	IK W6	0	90.0	10	100	5
4-271-0-E	PUMP ROOM	₩ 6	0	190.0	10	100	5
4-271-0-E	PUMP ROOM	W6	0	190.0	10	100	5
4-271-1-F	LUBE OIL	₩6	0	45.0	10	100	5
4-271-2-F	LUBE OIL	W6	0	45.0	10	100	5
5-162-0-E	ENGINE ROOM NO.2	F3	0	2.5	25	300	5
5-22 3-0-E	MOTOR ROOM	F0	0	1932.4	0	0	100
5-223-1-F	OIL TANK	F3	0	336.0	25	300	5
5-223-2-F	OIL TANK	F3	0	336.0	25	300	5
3-223-0-E	MOTOR GENERATOR ROOM	C3	2	2606.9	10	100	5

Compartment: 4-271-0-E PUMP ROOM

USE: E Machinery areas which are normally occupied.

AREA: 1615 sq.ft. DECK HEIGHT: 10.0 ft. VOLUME: 16,159 cq.ft.

UNACCEPTABLE LOSS: Code 2 (Major item involved in fire)

THRESHOLD FREQUENCY OF UNACCEPTABLE LOSS: 0.0330 per ship year

FREQUENCY OF ESTABLISHED BURNING: 0.0020

FUEL LOAD: 18,019 BTUs/sq.ft.

Cables, paint, etc (5gpm x 6m/compartment area)

UENTILATION: 2,693 cu ft/min EXCHANGE TIME: 6.0 min.

UENT AREA: 500 sq.in. UENT HEIGHT: 70 in.

FIRE S	TARTED	DUE	TO:	t f	I	FRI Time	А	М
 Fi	re Orig	in		 ا	 0	3	85	10
	ar Fail			1	5	3	20	40
Dh	er Fail	ore		1	n	*	Ω	Ω

* calculated as (100 - % Heat Release)/100 X FRI Time or 2 min., whichever is greater.

Assumes a fuel or lube oil line rupture No line rupture as adjacent compartment

DETECTION:

Manual:

Occupied 0% of time in port and 15% of time at sea.

Automatic:

Rate of temperature rise detection system (RR) Photo electric smoke detection system (P) Flame detection system (UV or IR) (F)

FIRST AID FIRE PROTECTION:

3 Hand portable dry chemical fire extinguisher (PKP)

AUTOMATED FIRE PROTECTION SYSTEMS:

- 1 Halon 1301 total flooding system remotely actuated
- 1 AFFF (3%) sprinkler system remotely actuated

- 1 1 1/2" Seawater hand line with "all purpose nozzle" 50 ft.
- 2 1 1/2" AFFF (3%) hand line with SFL variable nozzle 50 ft.

Compartment: 4-271-0-E PUMP ROOM

Barriers (Adjoining Compts ID and Name)			D∕H	Area- sq.ft.	Tbar	Dbar	%heat rel
4-223-0-E	MOTOR ROOM	Me	0	190.0	10	100	5
4-223-0-E	MOTOR ROOM	W6	0	190.0	10	100	5
4-271-1-F	LUBE OIL	W6	Õ	90.0	10		5
4-271-1-F	LUBE OIL	ωe	Õ	200.0	10	100	5
4-271-2-F	LUBE OIL	W6	Ö	90.0	10	100	5
4-271-2-F	LUBE OIL	W6	Ŏ	200.0	10	100	5
4-271-3-J	JP-5 STORAGE	W6	0	288.0	10	100	5
4-271- 4- J	JP-5 STORAGE	₩6	0	288.0	10	100	5
4-299-1-J	JP-5 SERUICE	₩6	0	41.0	10	100	5
4-299-2-J	JP-5 SERVICE	W6	0	41.0	10	100	5
4-303-1-J	JP-5 STORAGE	W6	8	<i>77</i> . 0	10	100	5
4-303-2-J	JP-5 STORAGE	W6	0	<i>77</i> .0	10	100	5
4-311-0-W	BILGE TANK	₩6	0	90.0	10	100	5
4-311-0-W	BILGE TANK	W6	0	125.0	10	10 0	5
4-311-0-W	BILGE TANK	₩6	0	215.0	10	100	5
5-271-0-F	OIL TANK	F3	0	1150.6	25	300	5
3-271-0-E	AUXILIARY MACHINERY ROOM	C3	1	1615.9	10	100	5

Compartment: 5-49-0-E BOW THRUSTER MACHINERY ROOM

USE: E Machinery areas which are normally occupied.

AREA: 513 sq.ft. DECK HEIGHT: 8.0 ft. VOLUME: 4,109 cu.ft.

UNACCEPTABLE LOSS: Code 8 (All compartments of one type lost to fire)

THRESHOLD FREQUENCY OF UNACCEPTABLE LOSS: 0.1000 per ship year

FREQUENCY OF ESTABLISHED BURNING: 0.0033

FUEL LOAD: 22,353 BTUs/sq.ft.

Cables, paint, etc. (5gpm x 6m/compartment area)

UENTILATION: 1,369 cu ft/min EXCHANGE TIME: 3.0 min.

UENT AREA: 500 sq.in. UENT HEIGHT: 70 in.

* calculated as (100 - % Heat Release)/100 X FRI Time or 2 min., whichever is greater.

Assumes a fuel or lube oil line rupture No line rupture as adjacent compartment

DETECTION:

Manual:

Occupied 0% of time in port and 15% of time at sea.

Automatic:

Rate of temperature rise detection system (RR) Photo electric smoke detection system (P)

Flame detection system (UV or IR) (F)

AUTOMATED FIRE PROTECTION SYSTEMS:

- 1 1 1/2" Seawater hand line with "all purpose nozzle" 50 ft.
- 2 1 1/2" AFFF (3%) hand line with SFL variable nozzle 50 ft.

Compartment: 5-49-0-E BOW THRUSTER MACHINERY ROOM

Bar	riers	Mat	D/H	Area-	Tbar	Dbar	%heat
(Adjoining	Compts ID and Name)	ID		sq.ft.			rel
	-	_					
5-45-0-V	UOID SPACE	₩6	0	22.4	10	100	5
5-45-0-V	UOID SPACE	ω6	0	22.4	10	100	5
5-76-0-E	BOW THRUSTER MACHINERY RO) W6	1	71.2	10	100	5
5-76-0-E	BOW THRUSTER MACHINERY RO) W6	1	71.2	10	100	5
5-76-1-F	OIL TANK	₩6	0	76 . 8	10	100	5
5-76-2-F	OIL TANK	W6	0	76.8	10	100	5
4-49-0-E	HYDRAULIC PUMP ROOM	C3	0	467.6	10	100	5
4-49-1-F	OIL TANK	C3	0	22.0	10	100	5
4-49-2-F	OIL TANK	C3	0	22.0	10	100	5

Compartment: 5-76-0-E BOW THRUSTER MACHINERY ROOM

USE: E Machinery areas which are normally occupied.

AREA: 696 sq.ft. DECK HEIGHT: 8.0 ft. VOLUME: 5,568 cu.ft.

UNACCEPTABLE LOSS: Code 8 (All compartments of one type lost to fire) THRESHOLD FREQUENCY OF UNACCEPTABLE LOSS: 0.1000 per ship year

FREQUENCY OF ESTABLISHED BURNING: 0.0033

FUEL LOAD: 20,689 BTUs/sq.ft.

Cables, paint, ect. (5gpm x 6m/compartment area

UENTILATION: 1,856 cu ft/min EXCHANGE TIME: 3.0 min.

UENT AREA: 500 sq.in. UENT HEIGHT: 70 in.

FIRE	STARTED	DUE	TO:	1	I	FRI Time	A	М
I	ire Ori	gin			 0	6	0	5
	Tbar Fai			1	5	6	0	30
I	Dbar Fai	lure		J	0	*	0	0

* calculated as (100 - % Heat Release)/100 X FRI Time or 2 min., whichever is greater.

Assumes a fuel or lube oil rupture
No line rupture as adjacent compartment

DETECTION:

Manual:

Occupied 0% of time in port and 15% of time at sea.

Automatic:

Rate of temperature rise detection system (RR) Photo electric smoke detection system (P) Flame detection system (UV or IR) (F)

FIRST AID FIRE PROTECTION:

1 Hand portable dry chemical fire extinguisher (PKP)

AUTOMATED FIRE PROTECTION SYSTEMS:

- 1 1 1/2" Seawater hand line with "all purpose nozzle" 50 ft.
- 2 1 1/2" AFFF (3%) hand line with SFL variable nozzle 50 ft.

Compartment: 5-76-0-E BOW THRUSTER MACHINERY ROOM

Barr	iers		Mat	D/H	Area-	Tbar	Dbar	Sheat
(Adjoining C	Compts ID and Name)		ID		sq.ft.			rel
5-100-0-E	ENGINE ROOM NO.1		ы6	0	288.0	10	100	5
5-49-0-E	BOW THRUSTER MACHINERY	RO	ω6	1	71.2	10	100	5
5-49-0-E	BOW THRUSTER MACHINERY	RO	W6	1	71.2	10	100	5
5-76-1-F	OIL TANK		W6	0	237.6	10	100	5
5-76-2-F	OIL TANK		W6	0	237.6	10	100	5
4-49-0-E	HYDRAULIC PUMP ROOM		C3	0	696.0	10	100	5

COMPARTMENT FIRE SAFETY SUMMARY FOR

POLAR ICEBREAKER REPLACEMENT (drawings dated 5/12/1987)

Compartment: 5-100-0-E ENGINE ROOM NO.1 (TANK TOP LEVEL) Zero strength barrier above.

USE: E Machinery areas which are normally occupied.

AREA: 2391 sq.ft. DECK HEIGHT: 8.0 ft. VOLUME: 19,135 cu.ft.

UNACCEPTABLE LOSS: Code 3 (Full compartment lost to fire) THRESHOLD FREQUENCY OF UNACCEPTABLE LOSS: 0.0330 per ship year

FREQUENCY OF ESTABLISHED BURNING: 0.0474

FUEL LOAD: 18,916 BTUs/sq.ft.

Cable, paint, etc., (40gpm x 6m/compartment area)

UENTILATION: 19,135 cu ft/min EXCHANGE TIME: 1.0 min. UENT AREA: 2100 sq.in. UENT HEIGHT: 70 in.

FIRE STARTED DUE TO:	1	I	FRI Time	A	М
Fire Origin	 l	0	 6	 85	10
Thar Failure	į	5	6	20	40
Dbar Failure	1	5	*	0	0

 \star calculated as (100 - % Heat Release)/100 \times FRI Time or 2 min., whichever is greater.

Assumes a fuel or lube oil line rupture No line rupture as adjacent compartment

DETECTION:

Manual:

Occupied 0% of time in port and 15% of time at sea.

Automatic:

Rate of temperature rise detection system (RR) Photo electric smoke detection system (P) Flame detection system (UV or IR) (F)

FIRST AID FIRE PROTECTION:

- 2 Hand portable carbon dioxide fire extinguisher
- 4 Hand portable dry chemical fire extinguisher (PKP)

AUTOMATED FIRE PROTECTION SYSTEMS:

- 1 Halon 1301 total flooding system remotely actuated
- 1 AFFF (3%) sprinkler system remotely actuated

- 1 1 1/2" Seawater hand line with "all purpose nozzle" 50 ft.
- 2 1 1/2" AFFF (3%) hand line with SFL variable nozzle 50 ft.

Compartment: 5-100-0-E ENGINE ROOM NO.1 (TANK TOP LEUEL)

	iers Compts ID and Name)		Mat ID	D/H	Area- sq.ft.	Tbar	Dbar	%heat rel
5-100-1-F 5-100-2-F	OIL TANK OIL TANK		พ6 พ6	0	491.2 491.2	10 10	100	5 5
5-162-0-E 5-76-0-E 4-100-0-E	ENGINE ROOM NO.2 BOW THRUSTER MACHINERY ENGINE ROOM NO.1	RO I	₩6 ₩6 C0	0	336.0 288.0 2390.6	10 10	100 100	5 5 100

COMPARTMENT FIRE SAFETY SUMMARY FOR POLAR ICEBREAKER REPLACEMENT

(drawings dated 5/12/1987)

Compartment: 5-162-0-E ENGINE ROOM NO.2 (TANK TOP LEUEL) Zero strength barrier above.

USE: E Machinery areas which are normally occupied.

AREA: 2575 sq.ft. DECK HEIGHT: 8.0 ft. VOLUME: 20,607 cq.ft.

UNACCEPTABLE LOSS: Code 3 (Full compartment lost to fire) THRESHOLD FREQUENCY OF UNACCEPTABLE LOSS: 0.0330 per ship year

FREQUENCY OF ESTABLISHED BURNING: 0.0474

FUEL LOAD: 18,137 BTUs/sq.ft.

Cables, paint, etc., (40gpm x 6m/compartment area)

UENTILATION: 20,607 cu ft/min EXCHANGE TIME: 1.0 min.

UENT HEIGHT: 70 in. UENT AREA: 2100 sq.in.

FIRE STARTED DUE TO:	1 1	I	FRI Time	A	М
Fire Origin		0	6	85	10
Tbar Failure	ı	5	6	20	40
Dhar Failure	i	5	*	n	Ω

* calculated as (100 - % Heat Release)/100 X FRI Time or 2 min., whichever is greater.

Assumes a fuel or lube oil line rupture No line rupture as adjacent compartment

DETECTION:

Manual:

Occupied 0% of time in port and 15% of time at sea.

Automatic:

Rate of temperature rise detection system (RR) Photo electric smoke detection system (P)

Flame detection system (UV or IR) (F)

FIRST AID FIRE PROTECTION:

- 2 Hand portable carbon dioxide fire extinguisher
- 4 Hand portable dry chemical fire extinguisher (PKP)

AUTOMATED FIRE PROTECTION SYSTEMS:

- 1 Halon 1301 total flooding system remotely actuated
- 1 AFFF (3%) sprinkler system remotely actuated

- 1 1 1/2" Seawater hand line with "all purpose nozzle" 50 ft.
- 2 1 1/2" AFFF (3%) hand line with SFL variable nozzle 50 ft.

Compartment: 5-223-0-E MOTOR ROOM (TANK TOP LEVEL)
Zero strength barrier above.

USE: E Machinery areas which are normally occupied.

AREA: 2013 sq.ft. DECK HEIGHT: 8.0 ft. VOLUME: 16,108 cq.ft.

UNACCEPTABLE LOSS: Code 2 (Major item involved in fire)

THRESHOLD FREQUENCY OF UNACCEPTABLE LOSS: 0.0330 per ship year

FREQUENCY OF ESTABLISHED BURNING: 0.0031

FUEL LOAD: 19,242 BTUs/sq.ft.

Cables, paint, etc, (10gpm x 6m/compartment area)

UENTILATION: 2,684 cu ft/min EXCHANGE TIME: 6.0 min.

UENT AREA: 1000 sq.in. UENT HEIGHT: 70 in.

FIRE STARTED DUE TO:	1 1	I	FRI Time	A	М
Fire Origin		0	6	80	10
Tbar Failure	1	5	6	15	40
Dhar Failure	1	0	*	0	0

* calculated as (100 - % Heat Release)/100 X FRI Time or 2 min., whichever is greater.

Assumes a fuel or lube oil line rupture No line rupture as adjacent compartment

DETECTION:

Manual:

Occupied 0% of time in port and 15% of time at sea.

Automatic:

Rate of temperature rise detection system (RR)

Photo electric smoke detection system (P)

Flame detection system (UV or IR) (F)

FIRST AID FIRE PROTECTION:

AUTOMATED FIRE PROTECTION SYSTEMS:

1 Halon 1301 total flooding system - remotely actuated

- 1 1 1/2" Seawater hand line with "all purpose nozzle" 50 ft.
- 2 1 1/2" AFFF (3%) hand line with SFL variable nozzle 50 ft.